



ADHD

ATTENTION DEFICIT HYPERACTIVITY DISORDER


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Journal of Family Therapy. 2008 Feb;30:113-15.

ADHD Grown up. A Guide to Adolescent and Adult ADHD.

Adams A.

Reviews the book, ADHD grown up. A guide to adolescent and adult ADHD by Joel Young (see record 2007-02093-000). It is now widely recognized that attention deficit disorder with hyperactivity (ADHD) is not only a childhood disorder and that symptoms often persist into adulthood. Joel Young's timely book clarifies the importance of recognizing ADHD as a life span disorder. The text is divided into three sections: (1) Diagnostic issues; (2) Population examples; (3) Treatment. It is written in a straightforward and crystal-clear manner which makes the reading interesting and palatable. It is relevant both for the clinician and the layperson. (PsycINFO Database Record (c) 2008 APA, all rights reserved).

J Neural Transm. 2008;115:241-47.

Interference control in attention-deficit/hyperactivity disorder: Differential Stroop effects for colour-naming versus counting.

Albrecht B, Rothenberger A, Sergeant J, et al.

Deficits in interference control are ascribed to patients suffering from ADHD by a number of cognitive theories. However, previous research using the Stroop Colour Word Interference Task has demonstrated mixed results that may be explained by methodological issues (e.g., possible impact of colour perception abilities on interference liability, different approaches to calculate interference scores, conflation of speed and accuracy factors). Hence, this study included two computerized versions of the Stroop (Colour-Stroop, Counting Stroop) which allowed to calculate separate measures of speed and accuracy, provided a more rigorous approach to calculate interference, and permitted to investigate the effects of stimulus properties on interference. Participants were 14 children with a DSM-IV diagnosis of ADHD combined type and 15 matched controls. Children completed a traditional Stroop as well as both a computerized Colour- and Counting-Stroop. Results indicated that the ADHD group showed higher interference scores than controls in the Colour-Stroop, but not in the Counting-Stroop. Thus, interference control may be not generally impaired in ADHD, and examinations with the Colour Stroop should be interpreted with care. (copyright) 2007 Springer-Verlag

Prog Neuro-Psychopharmacol Biol Psychiatry. 2008;32:145-49.

Modafinil as a treatment for Attention-Deficit/Hyperactivity Disorder in children and adolescents: A double blind, randomized clinical trial.

Amiri S, Mohammadi MR, Mohammadi M, et al.

Attention-Deficit/Hyperactivity Disorder (ADHD) is the most prevalent psychiatric disorder currently afflicting children and is among the most common chronic conditions affecting school-age children. Modafinil is structurally different from the psychostimulants that are typically used to treat ADHD and has been reported to be effective in improving the symptoms of ADHD. The aim of the present study was to further evaluate, under double blind and controlled conditions, the efficacy of modafinil for ADHD in children and adolescents as compared to methylphenidate. Patients included 60 outpatients, children (47 boys and 13 girls) between

Per la ricerca degli articoli pubblicati nella letteratura scientifica nel mese in esame sono state consultate le banche dati Medline, Embase e PsycINFO 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.

the ages of 6-15 who clearly met the DSM-IV-TR diagnostic criteria for ADHD. Subjects were recruited from an outpatient child and adolescent clinic for a 6 week double blind, randomized clinical trial. All study subjects were randomly assigned to receive either treatment with modafinil film coated tablet (in doses of 200-300 mg/day) depending on weight (200 mg/day for < 30 kg and 300 mg/day for > 30 kg) (group 1) or methylphenidate (in doses of 20-30 mg/day) depending on weight (20 mg/day for < 30 kg and 30 mg/day for > 30 kg) (group 2). The principal measure of outcome was the Teacher and Parent ADHD Rating Scale-IV. Patients were assessed at baseline and at 21 and 42 days after the medication started. No significant differences were observed between the two groups on the Parent and Teacher Rating Scale scores. Side effects of decreased appetite and difficulty falling asleep were observed more in the methylphenidate group. The results of this study indicate that modafinil significantly improved symptoms of ADHD and was well tolerated and it is beneficial in the treatment of children with ADHD. (copyright) 2007 Elsevier Inc. All rights reserved.

Pharmacotherapy. 2008;28:156-69.

Nonmedical use of prescription stimulants among college students: Associations with attention-deficit-hyperactivity disorder and polydrug use.

Arria AM, Caldeira KM, O'Grady KE, et al.

Study Objective. To define, among a sample of college students, the nature and extent of nonmedical use of prescription stimulants (NPS), including both overuse and use of someone else's drug, for attention-deficit-hyperactivity disorder (ADHD); to characterize NPS among individuals not medically using a prescription stimulant for ADHD; and to determine whether NPS and overuse of a medically prescribed stimulant for ADHD were independently associated with an increased risk of other illicit drug use and dependence on alcohol and marijuana. Design. Cross-sectional analysis of personal interview data. Setting. Large public university in the mid-Atlantic region. Participants. A cohort of 1253 first-year college students aged 17-20 years. Measurements and Main Results. All students completed a 2-hour personal interview to ascertain medical use and overuse of prescription stimulants, NPS, nonmedical use of other prescription drugs and illicit drug use, and dependence on alcohol and marijuana. Comparisons were made among nonusers, nonmedical users, and medical users of prescription stimulants for ADHD (ADHD+), some of whom overused their drug. Of 1208 students who were not using prescription stimulants medically for ADHD (ADHD-), 218 (18.0%) engaged in NPS. Of 45 ADHD+ students, 12 (26.7%) overused their ADHD drug at least once in their lifetime, and seven (15.6%) nonmedically used someone else's prescription stimulants at least once in their lifetime. Among 225 nonmedical users, NPS was infrequent and mainly associated with studying, although 35 (15.6%) used prescription stimulants to party or to get high. Lifetime NPS was associated with past-year other drug use. Both NPS and overuse of prescribed stimulants for ADHD were independently associated with past-year use of five drugs, holding constant sociodemographic characteristics; NPS was also associated with alcohol and marijuana dependence. Conclusions. Physicians should be vigilant for possible overuse and/or diversion of prescription stimulants for ADHD among college students who are medical users of these drugs, as well as the occurrence of illicit drug use with NPS. Initiation of comprehensive drug prevention activities that involve parents as well as college personnel is encouraged to raise awareness of NPS and its association with illicit drug use.

Res Autism Spectr Disord. 2008;2:95-109.

Basic reading skills in high-functioning Swedish children with autism spectrum disorders or attention disorder.

Asberg J, Dahlgren S, Hlgren Sandberg A.

High-functioning children with autism spectrum disorders (ASD) have been reported to have an early success in reading. Children with attention disorders such as DAMP or ADHD, on the other hand, often struggle acquiring reading skills. The primary aim of the study was two-fold: (a) to compare reading performance of children with ASD, DAMP and typical development; (b) to examine whether memory functions and verbal and performance IQ related differently to the reading performance depending on diagnosis. Striking similarities were found between clinical groups on performance level and patterns of reading ability. Decoding and reading comprehension difficulties were common in both clinical groups relative to the comparison group matched for mental age. There was a strong association between word decoding fluency and sentence reading comprehension in the clinical groups even after the effect of age and

VIQ was partialled out. Further research on cognition, linguistic abilities and educational milieu is warranted to explore the reasons for the word decoding difficulties. (copyright) 2007 Elsevier Ltd. All rights reserved.

Curr Psychiatry Rep. 2008;10:1-2.

ADHD and sleep deprivation in school-aged children.

Ballas P.

Pediatrics. 2008;121:e314-e320.

Atomoxetine for the treatment of attention-deficit/hyperactivity disorder and oppositional defiant disorder.

Bangs ME, Hazell P, Danckaerts M, et al.

OBJECTIVE. In this study we examined the effectiveness of atomoxetine for the treatment of oppositional defiant disorder comorbid with attention-deficit/hyperactivity disorder. **METHODS.** Patients were aged 6 to 12 years and met Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, diagnostic criteria for attention-deficit/hyperactivity disorder with a Swanson, Nolan, and Pelham Rating Scale-Revised attention-deficit/hyperactivity disorder subscale score above age and gender norms; Clinical Global Impressions-Severity Scale score of (greater-than or equal to)4; and Swanson, Nolan, and Pelham Rating Scale-Revised oppositional defiant disorder subscale score of (greater-than or equal to)15. Patients were randomly assigned in a 2:1 ratio to receive 1.2 mg/kg per day of atomoxetine (n = 156) or placebo (n = 70) for 8 weeks. Treatment effect on oppositional defiant disorder and attention-deficit/hyperactivity disorder symptoms was measured by using the investigator-rated Swanson, Nolan, and Pelham Rating Scale-Revised. **RESULTS.** Repeated-measures analysis demonstrated a statistically significant difference favoring atomoxetine over placebo in the reduction of Swanson, Nolan, and Pelham Rating Scale-Revised oppositional defiant disorder total scores. There were significant pairwise treatment differences at weeks 2 and 5 but not at week 8 postbaseline. A last-observation-carried-forward analysis showed Swanson, Nolan, and Pelham Rating Scale-Revised scores at endpoint for the atomoxetine and placebo groups were significantly different for attention-deficit/hyperactivity disorder symptoms but not for oppositional defiant disorder symptoms. Atomoxetine was superior to placebo in a last-observation-carried-forward analysis of Clinical Global Impression-Improvement and Clinical Global Impression-Severity scores. **CONCLUSIONS.** This study confirms previous findings that patients with attention-deficit/hyperactivity disorder and comorbid oppositional defiant disorder show statistically and clinically significant improvement in attention-deficit/hyperactivity disorder symptoms and global clinical functioning when treated with atomoxetine. It remains uncertain, however, whether atomoxetine exerts a specific and enduring effect on oppositional defiant disorder symptoms. Copyright (copyright) 2008 by the American Academy of Pediatrics.

Journal of Child and Family Studies. 2008 Feb;17:28-43.

Parenting behavior and cognitions in a community sample of mothers with and without symptoms of attention-deficit/hyperactivity disorder.

Banks T, Ninowski JE, Mash EJ, et al.

Although attention-deficit/hyperactivity disorder (ADHD) in adults has recently emerged as an important area of research, little attention has been given to the family functioning of women with ADHD, particularly in their role as mothers. We examined parenting self-esteem, locus of control, and disciplinary styles in a community sample of mothers with varying levels of ADHD symptoms. Women with high levels of ADHD symptoms reported more occupational and psychiatric problems than women with lower levels of ADHD symptoms. They also reported lower parenting self-esteem, a more external parenting locus of control, and less effective disciplinary styles. The findings suggest that women with ADHD symptoms may face a number of difficulties within the parenting domain. (PsycINFO Database Record (c) 2008 APA, all rights reserved) (from the journal abstract)

J Pediatr. 2008;152:263-69.

Interaction of Dopamine Transporter Genotype with Prenatal Smoke Exposure on ADHD Symptoms.

Becker K, El-Faddagh M, Schmidt MH, et al.

Objective: To demonstrate that children homozygous for the 10-repeat allele of the common dopamine transporter (DAT1) polymorphism who were exposed to maternal prenatal smoke exhibited significantly higher hyperactivity-impulsivity than children without these environmental or genetic risks. Study design: We performed a prospective longitudinal study from birth into early adulthood monitoring the long-term outcome of early risk factors. Maternal prenatal smoking was determined during a standardized interview with the mother when the child was 3 months old. At age 15 years, 305 adolescents participated in genotyping for the DAT1 40 base pair variable number of tandem repeats polymorphism and assessment of inattention, hyperactivity-impulsivity, and oppositional defiant/conduct disorder symptoms with the Kiddie-Sads-Present and Lifetime Version. Results: There was no bivariate association between DAT1 genotype, prenatal smoke exposure and symptoms of attention deficit hyperactivity disorder. However, a significant interaction between DAT1 genotype and prenatal smoke exposure emerged ($P = .012$), indicating that males with prenatal smoke exposure who were homozygous for the DAT1 10r allele had higher hyperactivity-impulsivity than males from all other groups. In females, no significant main effects of DAT1 genotype or prenatal smoke exposure or interaction effects on any symptoms were evident (all $P > .25$). Conclusions: This study provides further evidence for the multifactorial nature of attention deficit hyperactivity disorder and the importance of studying both genetic and environmental factors and their interaction. (copyright) 2008 Mosby, Inc. All rights reserved

J Clin Psychopharmacol. 2008;28:89-92.

The effects of methylphenidate on word decoding accuracy in boys with attention-deficit/hyperactivity disorder.

Bental B, Tirosh E.

The investigation aimed to delineate the immediate effect of methylphenidate on decoding in the comorbid condition of attention-deficit/ hyperactivity disorder and reading disorder. Boys with attention-deficit/ hyperactivity and reading disorders ($n = 25$) between the ages of 7.9 and 11.7 years, with at least average intelligence and verbal processing abilities participated in a double-blind, acute, randomized, placebo-controlled crossover trial with a single dose of methylphenidate 0.3 to 0.4 mg/kg with weekly intervals between testing sessions. The test battery included tasks of attention/control functions and reading domain functions. Paired comparisons and first trial group comparison comparing performance under placebo and under methylphenidate were used. Methylphenidate selectively improved strategy/set shift ($P = 0.004$) and facilitated improvement both in rapid naming ($P = 0.043$) and word/nonword accuracy ($P = 0.028/P = 0.035$). These findings lend support to a possible influence of methylphenidate on cognitive attention functions related to reading skills in the comorbid group. (copyright) 2008 Lippincott Williams & Wilkins, Inc.

Pediatrics. 2008;121:e73-e84.

A randomized, double-blind, placebo-controlled study of guanfacine extended release in children and adolescents with attention-deficit/hyperactivity disorder.

Biederman J, Melmed RD, Patel A, et al.

OBJECTIVE. With this study we assessed the efficacy and safety of an extended-release formulation of guanfacine compared with placebo for the treatment of children and adolescents with attention-deficit/hyperactivity disorder. METHODS. In this multicenter, double-blind, placebo-controlled, fixed-dosage escalation study, patients aged 6 to 17 years were randomly assigned to 1 of 3 treatment groups of guanfacine extended release (2, 3, or 4 mg/day) or placebo for 8 weeks. The primary outcome measurement was the Attention-Deficit/Hyperactivity Disorder Rating Scale IV total score. Secondary measurements included Clinical Global Impression of Improvement, Parent's Global Assessment, Conners' Parent Rating Scale-Revised: Short Form, and Conners' Teacher Rating Scale-Revised: Short Form. RESULTS. A total of 345 patients were randomly assigned to placebo ($n = 86$) or guanfacine extended release 2 mg ($n = 87$), 3 mg ($n = 86$), or 4 mg ($n = 86$) treatment groups. Least-squares mean changes from baseline to the end point in Attention-Deficit/Hyperactivity Disorder Rating Scale IV total scores were significant in all groups of children taking guanfacine extended release: -16.18 in the 2-mg group, -16.43 in the 3-mg group, and -18.87 in the 4-mg group, compared with -8.48 in the placebo group. All groups of children taking guanfacine extended release showed significant improvement on hyperactivity/impulsivity and inattentiveness subscales of the Attention-Deficit/Hyperactivity Disorder Rating Scale IV, Clinical Global Impression of Improvement,

Parent's Global Assessment, Conners' Parent Rating Scale-Revised: Short Form, and Conners' Teacher Rating Scale-Revised: Short Form assessments compared with placebo. The most commonly reported treatment-emergent adverse events were headache, somnolence, fatigue, upper abdominal pain, and sedation. Small to modest changes in blood pressure, pulse rate, and electrocardiogram parameters were observed but were not clinically meaningful. **CONCLUSIONS.** Guanfacine extended release met the primary and secondary efficacy end points. It was well tolerated and effective compared with placebo. Copyright (copyright) 2008 by the American Academy of Pediatrics

J Pediatr. 2008;152:394-99.

Modafinil Improves Symptoms of Attention-Deficit/Hyperactivity Disorder across Subtypes in Children and Adolescents.

Biederman J, Pliszka SR.

Objective: This secondary analysis evaluated the efficacy of modafinil in children and adolescents by subtype of attention-deficit/hyperactivity disorder (ADHD) using pooled data from 3 double-blind, placebo-controlled studies. Study design: The patients were boys and girls age 6 to 17 years. ADHD subtype diagnoses (ie, inattentive, hyperactive-impulsive, combined) were based on criteria published in the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). Patients received modafinil (170 to 425 mg) or placebo once daily for 7 to 9 weeks. Efficacy assessment used the Attention-Deficit/Hyperactivity Disorder Rating Scale-IV (ADHD-RS-IV) School and Home Versions, Clinical Global Impression of Improvement scale (CGI-I), and Conners' Parent Rating Scale-Revised: Short Form (CPRS-R:S). Results: A total of 638 patients received modafinil (n = 423) or placebo (n = 215). The inattentive, hyperactive-impulsive, and combined subtypes included 187 (30%), 27 (4%), and 403 (65%) patients, respectively. Modafinil (vs placebo) significantly improved mean total scores for the ADHD-RS-IV School and Home Versions for the inattentive (change from baseline: School, modafinil, -15.7, placebo, -7.1; Home, modafinil, -13.8, placebo, -5.9) and combined subtypes (School, -16.5 vs -8.8; Home, -15.7 vs -7.6). Modafinil was associated with greater improvements on the CGI-I and improved CPRS-R:S subscale scores in inattentive and combined subtypes. Conclusions: Modafinil improved ADHD symptoms and behaviors in patients with the inattentive and combined subtypes as determined by teachers, investigators, and parents. (copyright) 2008 Mosby, Inc. All rights reserved.

Dev Neuropsychol. 2008;33:44-61.

Stability of executive function deficits in girls with ADHD: A prospective longitudinal followup study into adolescence.

Biederman J, Petty CR, Doyle AE, et al.

Neuropsychological deficits in the executive system are major sources of morbidity in individuals with attention-deficit/hyperactivity disorder (ADHD). We conducted a 5-year longitudinal study of girls with (N = 140) and without (N = 122) ADHD, aged 6-18 years at baseline. Neuropsychological functioning was assessed using standard neuropsychological testing assessing executive functions (EFs). Girls with ADHD were significantly more impaired than controls in all neuropsychological domains except set shifting. Despite variability in the stability of individual domains of EFs, the majority (79%) of girls with ADHD that met the categorical definition of executive function deficits (EFDs, defined as two or more EF tasks impaired) at baseline continued to have EFDs at the five-year followup. These findings document the stability of EFDs in girls with ADHD from childhood into adolescence. Copyright (copyright) 2008 Taylor & Francis Group, LLC.

Eur Psychiatry. 2008;23:134-41.

Attention deficit/hyperactivity disorder and video games: A comparative study of hyperactive and control children.

Bioulac S, Arfi L, Bouvard MP.

Introduction: This study describes and compares the behavior of hyperactive and control children playing video games. Subjects and methods: The sample consisted of 29 ADHD children and 21 controls aged between 6 and 16 years playing video games. We used the Child Behavior Checklist and the Problem Videogame Playing scale (PVP scale). This instrument gives objective measures of problem use, which can

be considered as an indication of addictive videogame playing. We designed a questionnaire for the parents, eliciting qualitative information about their child's videogame playing. There were no significant differences concerning frequency or duration of play between ADHD children and controls but differences were observed on the PVP scale. None of the controls scored above four whereas 10 hyperactive children answered affirmatively to five or more questions. These children presented a greater intensity of the disorder than the other ADHD children. Conclusion: While no differences concerning video game use were found, ADHD children exhibited more problems associated with videogame playing. It seems that a subgroup of ADHD children could be vulnerable to developing dependence upon video games. (copyright) 2007 Elsevier Masson SAS. All rights reserved.

J Neural Transm. 2008;115:261-68.

Inhibitory deficits in attention-deficit/hyperactivity disorder are independent of basic processing efficiency and IQ.

Bitsakou P, Psychogiou L, Thompson M, et al.

Background. A substantial proportion of children with attention-deficit/ hyperactivity disorder (ADHD) show deficits on inhibitory control tests. However, questions remain about (i) the extent of these deficits across different inhibitory domains, (ii) their relationship to deficits in non-executive processes and (iii) whether they extend into adolescence. Methods. Seventy-seven children and adolescents with ADHD and 50 non-ADHD controls completed three inhibitory tasks, a simple two choice RT task (2CR) and an IQ assessment. Results. ADHD was moderately associated with deficits on all tasks (effect sizes $d=0.5-0.9$). Deficits were equally marked in childhood and adolescence. Inhibitory deficits were not associated with IQ and, although reduced substantially, remained significant after performance on a simple reaction time task was controlled for statistically. Discussion. In highlighting the significant, but limited, role of inhibitory deficits in ADHD, these results are consistent with recent accounts that emphasize the neuropsychological heterogeneity of this condition. (copyright) 2007 Springer-Verlag.

Child Neuropsychol. 2008;14:82-96.

Facial affect interpretation in boys with attention deficit/hyperactivity disorder.

Boakes J, Chapman E, Houghton S, et al.

Recent studies have produced mixed evidence of impairments in facial affect interpretation for children with attention deficit/hyperactivity disorder (ADHD). This study investigated the presence and nature of such impairments across different stimulus formats. Twenty-four boys with ADHD and 24 age-matched comparison boys completed a 72-trial task that included facial expressions of happiness, sadness, fear, anger, surprise, and disgust. Three versions of each expression were used: a static version, a dynamic version, and a dynamic version presented within a relevant situational context. Expressions were also presented in one of two portrayal modes (cartoon versus real-life). Results indicated significant impairments for boys with ADHD on two of the six emotions (fear and disgust), which were consistent across stimulus formats. Directions for further research to identify mediating factors in the expression of such impairments in children with ADHD are discussed. (copyright) 2008 Psychology Press.

Am J Addict. 2008;17:54-59.

The association between attention deficit hyperactivity disorder in adolescence and smoking in adulthood.

Brook JS, Duan T, Zhang C, et al.

This longitudinal study examined the interrelationships between early and/or middle adolescent attention deficit hyperactivity disorder (ADHD), middle adolescent conduct disorder (CD), and later adult smoking behavior. This is a prospective longitudinal study. Data were collected via structured interviews of representative families in the northeastern United States (N = 641). The mean ages of the offspring were as follows: 14 years (T2, 1983), 17 years (T3, 1985-1986), and 32 years (T6, 2002). The dependent variable was the participants' daily cigarette smoking in their early thirties. Logistic regression analyses indicated that the relationship between ADHD and daily smoking behavior was mediated by CD with control on gender, age, SES, and adolescent smoking. CD had a direct effect on daily smoking in adulthood. Our findings

suggest that ADHD is related to CD, which in turn is associated with daily smoking. Therefore, interventions with ADHD adolescents who have ADHD at an early age might lead to some reduction in later smoking provided that the intervention has a positive effect on CD. For those adolescents who never had ADHD, our findings suggest that prevention or treatment aimed at reducing CD may be most successful in reducing daily smoking later in adulthood. Copyright (copyright) American Academy of Addiction Psychiatry.

Dev Med Child Neurol. 2008;50:129-33.

Sex differences in tactile defensiveness in children with ADHD and their siblings.

Broring T, Rommelse N, Sergeant J, et al.

Tactile defensiveness (TD) is a disturbance in sensory processing and is observed in some children with attention-deficit-hyperactivity disorder (ADHD). TD has been examined in male children with ADHD and in children with ADHD without differentiating by sex. As males and females with ADHD may differ in the clinical expression of the disorder and associated deficits, the aim of this study was to examine sex differences in TD in males and females with ADHD. Non-affected siblings were also examined to investigate familiarity of TD. The Touch Inventory for Elementary-School-Aged Children was administered to 47 children with ADHD (35 males, 12 females; mean age 9y 8mo [SD 1y 11mo]), 36 non-affected siblings (21 males, 15 females; mean age 8y 10mo [SD 2y 4mo]), and 35 control children (16 males, 19 females; mean age 9y 5mo [SD 6mo]). Results indicated that females with ADHD displayed higher levels of TD than males with ADHD (who did not differ from control males). This suggests that TD is sex specific and may contribute to the identification of ADHD in females, thus improving diagnostic and therapeutic strength in this under-referred group. Non-affected siblings were unimpaired, regardless of sex, which suggests that TD is specific to the disorder and not part of a familial risk for ADHD. (copyright) 2008 Blackwell Publishing Ltd.

J Intellect Disabil Res. 2008;52:156-62.

The prevalence of features of attention deficit hyperactivity disorder in a special school in Ireland.

Buckley S, Hillery J, Guerin S, et al.

Background: The prevalence of features of attention deficit hyperactivity disorder (ADHD) in children with intellectual disabilities (ID) in Irish schools is unknown. The aim of this study was to examine the prevalence of features of ADHD in a special school, in order to ascertain the number of children who may need further assessment for ADHD. The study also explores the reliability of the Conners Teachers Rating Scale in this population. Method: All teachers in a special school for children with ID were asked to complete the Conners Teachers Rating Scale and the Attention-Distractibility, Inhibition-Excitation Classroom Assessment Rating Scale, for those children whose parents had consented for them to take part in this study. Consent was obtained for 84 children a response rate of 71%, between the ages of 5 and 18 (mean = 10.5 years; SD = 3.7). Results: The Conners Teachers Rating Scale was found to be internally reliable and had a normal distribution with our results. Overall, 55.9% of participants (47/84) had markedly elevated scores ($T > 69$) for at least one of the target subscales, which were the 'Hyperactivity', 'Inattention' and the 'ADHD Index' subscales of the Conners Teachers Rating Scales. In addition, the findings would suggest that the Conners Teachers Rating Scale can be a useful screening tool in the population of school children with ID. Conclusions: The study suggests that ADHD may be under diagnosed in children with ID. This has practical implications for the mental health needs of these children. It is recommended that further studies are carried out to determine the prevalence of ADHD in this population. (copyright) 2007 The Authors. Journal Compilation (copyright) 2007 Blackwell Publishing Ltd.

J Neural Transm. 2008;115:177-86.

Differential family and peer environmental factors are related to severity and comorbidity in children with ADHD.

Buschgens CJM, Van Aken MAG, Swinkels SHN, et al.

Behavioral genetic studies imply that salient environmental influences operate within families, making siblings in a family different rather than similar. This study is the first one to examine differential sibling experiences (as measured with the Sibling Inventory of Differential Experience) and its effect on behavioral outcomes within ADHD families. Subjects were 45 Dutch ADHD probands and their unaffected siblings ($n =$

45) aged 10-18 years. ADHD probands and their unaffected siblings reported differences in sibling interaction, parental treatment, and peer characteristics. These nonshared environmental influences were related to both the severity of ADHD symptoms as well as to comorbid problem behaviors. These findings suggest that environmental influences that operate within ADHD families appear relevant to the severity of problem behaviors of ADHD children and their siblings. (copyright) 2008 Springer-Verlag.

Arch Gen Psychiatry. 2008;65:203-10.

A replicated molecular genetic basis for subtyping antisocial behavior in children with attention-deficit/hyperactivity disorder.

Caspi A, Langley K, Milne B, et al.

Context: Attention-deficit/hyperactivity disorder (ADHD) is a heterogeneous neurodevelopmental disorder that in some cases is accompanied by antisocial behavior. Objective: To test if variations in the catechol O-methyltransferase gene (COMT) would prove useful in identifying the subset of children with ADHD who exhibit antisocial behavior. Design: Three independent samples composed of 1 clinical sample of ADHD cases and 2 birth cohort studies. Participants: Participants in the clinical sample were drawn from child psychiatry and child health clinics in England and Wales. The 2 birth cohort studies included 1 sample of 2232 British children born in 1994-1995 and a second sample of 1037 New Zealander children born in 1972-1973. Main Outcome Measures: Diagnosis of ADHD and measures of antisocial behavior. Results: We present replicated evidence that the COMT valine/methionine polymorphism at codon 158 (COMT Val158Met) was associated with phenotypic variation among children with ADHD. Across the 3 samples, valine/valine homozygotes had more symptoms of conduct disorder, were more aggressive, and were more likely to be convicted of criminal offenses compared with methionine carriers. Conclusions: The findings confirm the presence of genetic heterogeneity in ADHD and illustrate how genetic information may provide biological evidence pointing to clinical subtypes. (copyright)2008 American Medical Association. All rights reserved.

J Neural Transm. 2008;115:163-75.

Co-transmission of conduct problems with attention-deficit/hyperactivity disorder: Familial evidence for a distinct disorder.

Christiansen H, Chen W, Oades RD, et al.

Common disorders of childhood and adolescence are attention-deficit/ hyperactivity disorder (ADHD), oppositional defiant disorder (ODD) and conduct disorder (CD). For one to two cases in three diagnosed with ADHD the disorders may be comorbid. However, whether comorbid conduct problems (CP) represents a separate disorder or a severe form of ADHD remains controversial. We investigated familial recurrence patterns of the pure or comorbid condition in families with at least two children and one definite case of DSM-IV ADHDct (combined-type) as part of the International Multicentre ADHD Genetics Study (IMAGE). Using case diagnoses (PACS, parental account) and symptom ratings (Parent/Teacher Strengths and Difficulties [SDQ], and Conners Questionnaires [CPTRS]) we studied 1009 cases (241 with ADHDonly and 768 with ADHD + CP), and their 1591 siblings. CP was defined as (greater-than or equal to)4 on the SDQ conduct-subscale, and T (greater-than or equal to) 65, on Conners' oppositional-score. Multinomial logistic regression was used to ascertain recurrence risks of the pure and comorbid conditions in the siblings as predicted by the status of the cases. There was a higher relative risk to develop ADHD + CP for siblings of cases with ADHD + CP (RRR = 4.9; 95%CI: 2.59-9.41); $p < 0.001$) than with ADHDonly. Rates of ADHDonly in siblings of cases with ADHD + CP were lower but significant (RRR = 2.9; 95%CI: 1.6-5.3, $p < 0.001$). Children with ADHD + CP scored higher on the Conners ADHDct symptom-scales than those with ADHDonly. Our finding that ADHD + CP can represent a familial distinct subtype possibly with a distinct genetic etiology is consistent with a high risk for cosegregation. Further, ADHD + CP can be a more severe disorder than ADHDonly with symptoms stable from childhood through adolescence. The findings provide partial support for the ICD-10 distinction between hyperkinetic disorder (F90.0) and hyperkinetic conduct disorder (F90.1). (copyright) 2008 Springer-Verlag.

Dev Psychopathol. 2008;20:139-64.

Smoking during pregnancy and offspring externalizing problems: An exploration of genetic and environmental confounds.

D'Onofrio BM, van Hulle CA, Waldman ID, et al.

Previous studies have documented that smoking during pregnancy (SDP) is associated with offspring externalizing problems, even when measured covariates were used to control for possible confounds. However, the association may be because of nonmeasured environmental and genetic factors that increase risk for offspring externalizing problems. The current project used the National Longitudinal Survey of Youth and their children, ages 4 - 10 years, to explore the relations between SDP and offspring conduct problems (CPs), oppositional defiant problems (ODPs), and attention-deficit/hyperactivity problems (ADHPs) using methodological and statistical controls for confounds. When offspring were compared to their own siblings who differed in their exposure to prenatal nicotine, there was no effect of SDP on offspring CP and ODP. This suggests that SDP does not have a causal effect on offspring CP and ODP. There was a small association between SDP and ADHP, consistent with a causal effect of SDP, but the magnitude of the association was greatly reduced by methodological and statistical controls. Genetically informed analyses suggest that unmeasured environmental variables influencing both SDP and offspring externalizing behaviors account for the previously observed associations. That is, the current analyses imply that important unidentified environmental factors account for the association between SDP and offspring externalizing problems, not teratogenic effects of SDP. (copyright) 2008 Cambridge University Press.

J Neural Transm. 2008;115:341-45.

Adrenergic (alpha)2A receptor gene and response to methylphenidate in attention-deficit/hyperactivity disorder-predominantly inattentive type.

Da Silva TL, Pianca TG, Roman T, et al.

An association between ADRA2A -1291 C > G polymorphism and response to methylphenidate in inattentive symptoms was previously suggested in children with ADHD. No investigation specifically assessed this association in ADHD-inattentive type (ADHD-I). In this naturalistic pharmacogenetic study, 59 subjects with ADHD-I from a non-referred sample were treated with short-acting methylphenidate and genotyped for ADRA2A -1291 C > G polymorphism. The primary outcome measure was the inattentive subscale of the SNAP-IV applied by a child psychiatrist blinded to genotype at baseline and first month of treatment. Children and adolescents with the G allele showed significantly lower inattentive scores with MPH treatment at the first month of treatment than subjects without the G allele ($n = 59$; $F = 6.14$; $p = 0.016$). We extended to ADHD-I previous findings suggesting the influence of the G allele at the ADRA2A -1291 C > G polymorphism on the improvement of inattentive symptoms with methylphenidate in children with all ADHD subtypes. (copyright) 2008 Springer-Verlag.

Journal of the American Academy of Child & Adolescent Psychiatry. 2008 Feb;47:189-98.

Clonidine for attention-deficit/hyperactivity disorder: II. ECG changes and adverse events analysis.

Daviss WB, Patel NC, Robb AS, et al.

Objective: To examine the safety and tolerability of clonidine used alone or with methylphenidate in children with attention-deficit/hyperactivity disorder (ADHD). Method: In a 16-week multicenter, double-blind trial, 122 children with ADHD were randomly assigned to clonidine ($n = 31$), methylphenidate ($n = 29$), clonidine and methylphenidate ($n = 32$), or placebo ($n = 30$). Doses were flexibly titrated up to 0.6 mg/day for clonidine and 60 mg/day for methylphenidate (both with divided dosing). Groups were compared regarding adverse events and changes from baseline to week 16 in electrocardiograms and vital signs. Results: There were more incidents of bradycardia in subjects treated with clonidine compared with those not treated with clonidine (17.5% versus 3.4%; $p = .02$), but no other significant group differences regarding electrocardiogram and other cardiovascular outcomes. There were no suggestions of interactions between clonidine and methylphenidate regarding cardiovascular outcomes. Moderate or severe adverse events were more common in subjects on clonidine (79.4% versus 49.2%; $p = .0006$) but not associated with higher rates of early study withdrawal. Drowsiness was common on clonidine, but generally resolved by 6 to 8 weeks. Conclusions: Clonidine, used alone or with methylphenidate, appears safe and well tolerated in childhood ADHD. Physicians prescribing clonidine should monitor for bradycardia and advise patients about the high likelihood of initial drowsiness. (PsycINFO Database Record (c) 2008 APA, all rights reserved) (from the journal abstract).

Behav Genet. 2008;38:11-23.

Genetic and environmental influences on the relation between attention problems and attention deficit hyperactivity disorder.

Derks EM, Hudziak JJ, Dolan CV, et al.

Objective: The assessment of symptoms of ADHD in children is usually based on a clinical interview or a behavior checklist. The aim of the present study is to investigate the extent to which these instruments measure an underlying construct and to estimate the genetic and environmental influences on individual differences in ADHD. Methods: Maternal ratings were collected on 10,916 twins from 5,458 families. Child Behavior Checklist (CBCL) ratings were available for 10,018, 6,565, and 5,780 twins at the ages 7, 10, and 12, respectively. The Conners Rating Scale (4,887 twins) and the DSM interview (1,006 twins) were completed at age 12. The magnitude of genetic and environmental influences on the variance of the three measures of ADHD and the covariance among the three measures of ADHD was obtained. Results: Phenotypic correlations range between .45 and .77. Variances and covariances of the measurements were explained mainly by genetic influences. The model that provided the best account of the data included an independent pathway for additive and dominant genetic effects. The genetic correlations among the measures collected at age 12 varied between .63 and 1.00. Conclusions: The genetic overlap between questionnaire ratings and the DSM-IV diagnosis of ADHD is high. Clinical and research implications of these findings are presented. (copyright) 2007 The Author(s).

J Neural Transm. 2008;115:201-09.

Decision-making on an explicit risk-taking task in preadolescents with attention-deficit/hyperactivity disorder.

Drechsler R, Rizzo P, Steinhausen HC.

Inappropriate risk-taking and disadvantageous decision-making have been described as major behavioural characteristics of patients with attention-deficit/hyperactivity disorder (ADHD). However these behaviours are difficult to measure in laboratory contexts and recent studies have yielded inconsistent results which might be related to task characteristics. The present study adopted the Game of Dice Task, a test procedure in which risks are made explicit and the load on working memory is minimal. As a result, preadolescents with ADHD (N = 23) made significantly more risky choices and suffered major losses of money compared to normal controls (N = 24) but only when they played the game a second time. Differences in risk-taking correlated significantly with hyperactivity as rated by parents and with inhibitory control, but not with working memory performance. The results are discussed in the context of current theories of ADHD. (copyright) 2007 Springer-Verlag.

Pediatr Neurol. 2008;38:147-49.

New-Onset Seizures: A Possible Association With Clonidine?

Feron FJM, Hendriksen JGM, Nicolai J, et al.

Clonidine is used as second-line medication for the treatment of attention deficit hyperactivity disorder in children. Product information concerning clonidine reported seizures only after overdosage of clonidine, and the prescription of clonidine has not been contraindicated in patients with known epilepsy. The present case report discusses a possible association of clonidine with new-onset seizures, in the context of status epilepticus in a 9-year-old girl. (copyright) 2008 Elsevier Inc. All rights reserved.

J Clin Psychiatry. 2008;69:149-59.

A randomized, double-blind, placebo-controlled, parallel-group study of methylphenidate transdermal system in pediatric patients with attention-deficit/hyperactivity disorder.

Findling RL, Bukstein OG, Melmed RD, et al.

Objective: To evaluate the efficacy and safety of methylphenidate transdermal system compared with placebo, using osmotic-release oral system (OROS) methylphenidate as a reference therapy. Method: We conducted a 7-week, randomized, double-blind, double-dummy, placebo-controlled trial in children diagnosed with attention-deficit/hyperactivity disorder by DSM-IV-TR criteria, within a community setting. The study was conducted from August 2004 to February 2005. Participants were randomly assigned to 1 of 3

treatments: methylphenidate transdermal system patch plus placebo capsule (N = 100), OROS methylphenidate capsule plus placebo patch (N = 94), or placebo capsule plus placebo patch (N = 88). Over 5 weeks, once-daily doses were optimized using 10-, 15-, 20-, and 30-mg methylphenidate transdermal system patches (9-hour wear time) or 18-, 27-, 36-, and 54-mg OROS methylphenidate capsules. Thereafter, optimal treatment doses were maintained for 2 weeks with blinded ratings of attention, behavior, and academic performance occurring at the end of each week. The primary efficacy measure was the clinician-rated ADHD Rating Scale-Version IV (ADHD-RS-IV). Additional measures included teacher, parent, and other clinician rating scales. Safety and tolerability were assessed throughout the study. Results: The mean change from baseline in ADHD-RS-IV scores was greater for participants receiving methylphenidate transdermal system and OROS methylphenidate treatments compared with placebo ($p < .0001$). Similar results were observed for parent and teacher rating scales. More participants receiving active treatments compared with placebo were rated as improved by clinicians and parents ($p < .0001$). Adverse events were generally mild or moderate in intensity, and the most common included decreased appetite, nausea, vomiting, and insomnia. Conclusions: The results of this study suggest that the methylphenidate transdermal system is an efficacious treatment option for children with attention-deficit/hyperactivity disorder. Trial Registration: clinicaltrials.gov Identifier: NCT00444574. (copyright) Copyright 2008 Physicians Postgraduate Press, Inc.

J Neural Transm. 2008;115:211-20.

Motor coordination problems in children and adolescents with ADHD rated by parents and teachers: Effects of age and gender.

Fliers E, Rommelse N, Vermeulen SHHM, et al.

Objective. ADHD is frequently accompanied by motor coordination problems. However, the co-occurrence of poor motor performance has received less attention in research than other coexisting problems in ADHD. The underlying mechanisms of this association remain unclear. Therefore, we investigated the prevalence of motor coordination problems in a large sample of children with ADHD, and the relationship between motor coordination problems and inattentive and hyperactive/impulsive symptoms. Furthermore, we assessed whether the association between ADHD and motor coordination problems was comparable across ages and was similar for both genders. Method. We investigated 486 children with ADHD and 269 normal controls. Motor coordination problems were rated by parents (Developmental Coordination Disorder Questionnaire) and teachers (Groningen Motor Observation Scale). Results. Parents and teachers reported motor coordination problems in about one third of children with ADHD. Problems of fine and gross motor skills, coordination skills and motor control were all related to inattentive rather than hyperactive/impulsive symptoms. Relative to controls, motor coordination problems in ADHD were still present in teenagers according to parents; the prevalence diminished somewhat according to teachers. Boys and girls with ADHD were comparably affected, but motor performance in controls was better in girls than in boys. Conclusions. Motor coordination problems were reported in one third of children with ADHD and affected both boys and girls. These problems were also apparent in adolescents with ADHD. Clinicians treating children with ADHD should pay attention to co-occurring motor coordination problems because of the high prevalence and the negative impact of motor coordination problems on daily life. (copyright) 2007 Springer-Verlag.

Drug Alcohol Depend. 2008;94:30-37.

Hyperactivity-inattention symptoms in childhood and substance use in adolescence: The youth gaze cohort.

Galera C, Bouvard MP, Messiah A, et al.

Background: This study addresses in both genders the relationship between childhood Hyperactivity-inattention symptoms and subsequent adolescent substance use, while controlling for psychiatric comorbidity, temperament and environmental risk factors. Methods: 916 subjects (421 males, 495 females) aged 7-18 were recruited from the general population and surveyed in 1991 and 1999. Child psychopathology and substance use patterns were evaluated through parent and adolescent self-reports. Multivariate modeling was performed to assess the effects of childhood Hyperactivity-inattention symptoms and other risk factors on adolescent substance use. Results: In males, Hyperactivity-inattention symptoms alone accounted for the risk of subsequent regular cannabis smoking (OR = 3.14, $p = 0.03$) and subsequent lifetime use of other drugs including stimulants, opiates, inhalants and sedatives (OR = 2.72, $p = 0.02$). In females, Hyperactivity-inattention symptoms did not independently increase the liability to later substance

use. In males, the temperament trait activity was a significant predictor of subsequent regular cannabis smoking (OR = 2.32, $p = 0.04$). Conclusions: This survey points to a possible specific link between Hyperactivity-inattention symptoms and subsequent cannabis use and experimentation of harder drugs in males. (copyright) 2007 Elsevier Ireland Ltd. All rights reserved.

J Clin Psychiatry. 2008;69:131-40.

National survey of adherence, efficacy, and side effects of methylphenidate in children with attention-deficit/hyperactivity disorder in Taiwan.

Gau SSF, Chen SJ, Chou WJ, et al.

Objectives: To identify the determinants of adherence to immediate-release (IR) methylphenidate in children and adolescents with attention-deficit/hyperactivity disorder (ADHD); to examine the impact of adherence on ADHD-related symptoms; and to compare the efficacy, adherence, and side effects of IR methylphenidate and osmotic release oral system (OROS) methylphenidate. Method: This national survey, involving 12 hospitals, consisted of 2 phases of assessment. Treatment adherence in 240 (39.5%) of the 607 children aged 5 to 16 years with a clinical diagnosis of DSM-IV ADHD enrolled in the study was poor (defined as missing (greater-than or equal to) 1 dose of ADHD medication a day and on 2 days or more during school days). Children with poor adherence at phase 1 were able to switch to OROS methylphenidate, while adherents remained on the IR variant. We reassessed 124 poor adherents who switched to OROS methylphenidate. The global ADHD severity, parent-child interaction, classroom behavior, academic performance, and side effects of the child subjects were evaluated by investigators. Parents completed the rating scales about the ADHD-related symptoms. The study began in April 2005 and was completed in February 2006. Results: Determinants for poor adherence included older age, later onset of ADHD, family history of ADHD, higher paternal education level, and multi-dose administration. Mental retardation and treatment at medical centers were inversely related to poor adherence. Overall, poor adherence was associated with more severe ADHD-related symptoms by comparison to good adherence. Similar side effect profile, superior adherence, and improved efficacy were demonstrated in intra-individual comparison of the OROS and IR methylphenidate forms. Conclusion: Given that poor adherence to medication may be an important reason for sub-optimal outcome in ADHD treatment, physicians should ensure adherence with therapy before adjusting dosage or switching medication. Trial Registration: clinicaltrials.gov Identifier NCT00460720. (copyright) Copyright 2008 Physicians Postgraduate Press, Inc.

J Neural Transm. 2008;115:191-200.

Attentional functions in children and adolescents with attention-deficit/hyperactivity disorder with and without comorbid tic disorder.

Greimel E, Herpertz-Dahlmann B, Gunther T, et al.

Although the coexistence of attention-deficit/hyperactivity disorder (ADHD) and tic disorder (TD) is common, the nature of association is yet not fully understood. Thus, the aim of the present study was to explore attentional dysfunction in children with pure ADHD compared to children with comorbid ADHD + TD. Three groups of 20 children each, aged 8-15 years with either ADHD, ADHD + chronic tic disorder or Tourette syndrome (ADHD + TD) and a healthy control group were compared in their performance on three computerized attention tasks. Tasks of sustained attention, selective attention and interference control were employed. In addition, parental ratings of ADHD symptom severity and behaviour problems were obtained. Both clinical groups were rated as equally inattentive, however, externalising symptoms were more severe in the ADHD group. Objective measures of attentional performance revealed differences between the groups: whereas the ADHD group was markedly impaired in sustaining attention and selective attention/inhibitory control, the ADHD + TD group only showed marginal deficits in selective attention/inhibitory control. Possible explanations for the superior performance of the comorbid group are discussed: In particular, the results may indicate that in some patients, the tic disorder produces behavioural symptoms of ADHD, but not the broad neurocognitive deficits that usually are associated with ADHD. Alternatively, compensatory neural mechanisms of TD patients may result in a better neuropsychological performance of comorbid patients relative to patients suffering from pure ADHD. (copyright) 2007 Springer-Verlag.

J Psychiatry Neurosci. 2008;33:10-16.

Relation of maternal stress during pregnancy to symptom severity and response to treatment in children with ADHD.

Grizenko N, Shayan YR, Polotskaia A, et al.

Objective: There is considerable evidence that maternal stress is associated with behavioural disturbances in offspring. The objective of this study was to examine whether there is an association between the severity of maternal stress during pregnancy and the severity of symptoms of attention-deficit hyperactivity disorder (ADHD). A second objective was to examine whether there is an association between maternal stress and children's response to methylphenidate (MPH). Methods: Using the Kinney Medical and Gynecological Questionnaire, we assessed 203 children with ADHD, aged between 6 and 12 years, regarding maternal stress during pregnancy. We assessed symptom severity with the Child Behavior Checklist (CBCL) and Conners' Global Index for Parents (CGI-P) and Teachers (CGI-T). Subjects were recruited from the ADHD clinic and the day-treatment program of the Child Psychiatry Department of the Douglas Hospital, Montreal, Quebec. The quality of their therapeutic response was assessed in a double-blind, placebo-controlled randomized 2-week crossover trial of MPH. Results: The most severe symptoms as assessed by the CBCL were found in the moderate stressor group, ($p < 0.002$), whereas, according to the CGI-P (emotional lability), the most severe symptoms were found in the severe stressor group ($p < 0.029$). There was no statistically significant difference between degree of response to MPH and level of maternal stress. Conclusion: Children with ADHD whose mothers were exposed to moderate and severe stress during pregnancy tend to develop more severe symptoms than children with ADHD whose mothers were not exposed to prenatal stress. It is therefore important to minimize stress in pregnant women. (copyright) 2008 Canadian Medical Association.

Schizophr Res. 2008;99:85-95.

Cognitive deficits in early-onset schizophrenia spectrum patients and their non-psychotic siblings: A comparison with ADHD.

Groom MJ, Jackson GM, Calton TG, et al.

Background: Previous research has shown cognitive deficits in patients with schizophrenia spectrum disorders in the areas of executive function, verbal memory and attention. Subtle deficits have been shown in healthy first-degree relatives of patients, suggesting that they may be trait markers. The specificity of these markers for schizophrenia compared with another neurodevelopmental disorder, Attention Deficit Hyperactivity Disorder (ADHD) has not been reliably established. Methods: The Rey Auditory Verbal Learning Test (RAVLT), Hayling Sentence Completion Test (HSCT), FAS Test of orthographic verbal fluency (FAS) and Continuous Performance Test-Identical Pairs (CPT-IP) were administered to adolescent schizophrenia spectrum patients (SZ; $n = 30$), adolescent siblings of schizophrenia spectrum patients (SZ-SIB; $n = 36$), healthy control participants (HC; $n = 72$); a neurodevelopmental comparison group of adolescents with ADHD ($n = 27$). Results: The SZ group were impaired on all measures. The SZ-SIB group were impaired on IQ, immediate recall (RAVLT), target sensitivity (CPT-IP), response initiation (HSCT); error rates for the FAS and HSCT. There were no significant differences between the SZ-SIB and ADHD groups on individual measures of cognitive function. Principal Components Analysis revealed four factors on which further analyses were conducted. The SZ-SIB and ADHD groups showed different profiles of impairment on components related to response initiation and sustained attention/vigilance when each was compared with the HC group. Conclusions: Deficits in intellectual function, verbal memory and response initiation/inhibition were found in the SZ-SIB group indicating that these are markers of risk for schizophrenia. Subtle differences in profiles of impairment in the SZ-SIB and ADHD groups on composite measures of attention and response initiation require further investigation. (copyright) 2007 Elsevier B.V. All rights reserved.

Acta Paediatr Int J Paediatr. 2008;97:233-38.

ADHD symptoms and maturity - A study in primary school children.

Gustafsson P, Thernlund G, Besjakov J, et al.

Aim: To study if age and non-behavioural measures of biological maturity have any associations with attention deficit hyperactivity disorder (ADHD). Methods: Two hundred fifty-one children 7 to 9 years of age in a Swedish school were screened for ADHD-symptom. ADHD-symptoms were estimated by Conners Abbreviated Questionnaire by both parents and teachers. Motor function, body weight and body height were measured. Skeletal age was estimated through hand radiographs. Results: Height, weight and skeletal bone-age did correlate significantly with age ($r_s = 0.44-0.69$, $p < 0.001$) but not with ADHD symptom scores. Motor

dysfunction had a weak negative correlation with age ($r_s = -0.21$, $p < 0.05$). Parent and teacher scores of ADHD-symptoms did not correlate with age. Conclusion: This study showed that the variables measuring general biological maturity had a strong association with age, whereas motor dysfunction and ADHD symptoms had no significant association with age. ADHD symptoms did not correlate with the variables measuring general biological maturity. These results do not support the hypothesis that a general biological immaturity is an important etiologic factor for ADHD symptomatology. (copyright) 2007 The Author(s).

J Am Acad Child Adolesc Psychiatry. 2008;47:219-20.

Supraventricular tachycardia in an adolescent with attention-deficit/hyperactivity disorder (ADHD).

Hammerness PG, Wilens TE, Berul CI, et al.

Presents a case of a 15-year-old boy with attention deficit/hyperactivity disorder (ADHD) who complained of heart racing during stimulant treatment. This case report demonstrates the importance of clinical monitoring during ADHD pharmacotherapy, using guidelines recommended by the American Heart Association. In addition, the case highlights the need for communication between providers to arrive at a clinical consensus of risk-benefit. In this case, all of the providers were in agreement that stimulant therapy was a medically important treatment and that continuation of its use did not pose a significant additional risk. Discontinuation of psychopharmacology may lead to adverse effects and is not always necessary. (PsycINFO Database Record (c) 2008 APA, all rights reserved).

Pediatr Nephrol. 2008;23:473-75.

Two cases of pheochromocytoma presenting with ADHD (attention deficit hyperactivity disorder)-like symptoms.

Haws R, Joseph M, Adelman R.

Two patients with pheochromocytoma initially presented with behavioral symptoms similar to those seen with attention deficit hyperactivity disorder (ADHD): Inability to concentrate, hyperactivity, and poor school performance. One patient was treated with dextroamphetamine/ amphetamine for 4 months, at which time medication was discontinued when hypertension appeared. The second patient had hypertension when initially seen. All behavioral abnormalities resolved following tumor resection. Children with ADHD-like symptoms who present atypically at an older age or have other somatic signs and symptoms such as headaches and hypertension should undergo evaluation to rule out an organic etiology. (copyright) IPNA 2007.

Dev Med Child Neurol. 2008;50:134-38.

Bullying and attention-deficit-hyperactivity disorder in 10-year-olds in a Swedish community.

Holmberg K, Hjern A.

The association of attention-deficit-hyperactivity disorder (ADHD) with bullying in the peer group in school was studied in an entire population of 577 fourth graders (10-year-olds) in one municipality in Stockholm, Sweden. The schoolchildren were screened for ADHD in a two-step procedure that included Conners' ratings of behavioural problems: teacher and parent interviews in a first step; and a clinical assessment in the second. Information about bullying was collected from the children themselves in a classroom questionnaire. Five-hundred and sixteen children (89.4% 252 females, 264 males), for whom there was information from all data sources, were included in the study population. Conners' ratings that were collected from parents early in first grade were available for 382 of these children. Hypotheses were tested by multivariate analyses with adjustment for sex and parental education. Pervasive ADHD was diagnosed in 9.5% (95% confidence interval [CI] 5.6-12.8) of the males and 1.6% (CI 0.1-3.1) of the females. ADHD was associated with bullying other students (adjusted odds ratios (OR) 3.8 [CI 2.0-7.2]) as well as being bullied (often, OR 10.8 [CI 4.0-29.0]; sometimes, OR 2.9 [CI 1.5-5.7]). Bullying other students in fourth grade was associated with high scores in parental reports of behavioural problems at entry into first grade, suggesting a causal link to the ADHD syndrome. Being bullied, on the other hand, was not linked to behavioural problems at school entry. This study demonstrates a connection between ADHD and bullying in the peer group at school. Evaluation and treatment strategies for ADHD need to include assessment and effective interventions for bullying.

Evaluation of ADHD should be considered in children involved in bullying. (copyright) 2008 Blackwell Publishing Ltd.

J Neural Transm. 2008;115:155-61.

CBCL-pediatric bipolar disorder phenotype: Severe ADHD or bipolar disorder?

Holtmann M, Goth K, Wockel L, et al.

Background. In children with pediatric bipolar disorder (PBD), a consistent pattern of elevations in hyperactivity, depression/anxiety, and aggression has been identified on the child behavior checklist (CBCL-PBD profile). The aim of the present study was to estimate the prevalence of the CBCL-PBD profile in a child psychiatric sample, and to determine ICD-10 diagnoses in CBCL-PBD patients. Methods. We studied a sample of 939 consecutively referred children and adolescents, aged 4-18 years. ICD-10 discharge diagnoses were established in consensus conferences. The CBCL 4-18 was completed by parents as part of the diagnostic routine. Results. A total of 62 subjects (6.6%; 95% CI=5.2-8.4) met criteria for the CBCL-PBD phenotype. More than 75% of CBCL-PBD subjects were clinically diagnosed with disruptive behavior disorders (ADHD, ODD, and CD). Two patients (0.2% of the total sample) received a formal diagnosis of bipolar disorder, but did not show the CBCL-PBD phenotype. Conclusions. A considerable number of children in Germany are referred to psychiatric care with a mixed phenotype of aggression, anxiety, depression and attention problems. Our study demonstrated a comparable prevalence and similar clinical characteristics as reported from other countries using different diagnostic approaches. However, the CBCL-PBD phenotype does not correspond with clinical consensus diagnoses of bipolar disorder, but with severe disruptive behavior disorders. (copyright) 2007 Springer-Verlag.

Child Neuropsychol. 2008;14:60-70.

Salience and temporal sequencing of time-related actions in boys with attention deficit/hyperactivity disorder.

Houghton S, Cordin R, Durkin K, et al.

Twenty-four 8- to 12-year-old boys with ADHD and 24 non-ADHD boys matched on age and IQ viewed an edited, nondialogue portion of a humorous television program to examine performance on a task requiring attention to and recall of temporal information. Participants were required to retell the story as closely as possible, to complete a picture-prompted sequencing task taken from the story, and to identify time-saving actions taken by the central character. Measures were also obtained of the number of prospective, retrospective, or present time-related references made and whether participants correctly identified the overarching time theme of the story. Significant group differences in favor of the comparison boys were evident in the total number of actions recalled and the number of events recalled in sequence. When controlling for poorer memory performance in boys with ADHD, however, there was no significant main effect of diagnostic group. A logistic regression analysis controlled for poorer memory performance indicated no significant differences between the number of boys with and without ADHD who correctly identified the overarching time theme of the story. (copyright) 2007 Psychology Press.

J Neural Transm. 2008;115:335-39.

No increase in long-term risk for nicotine use disorders after treatment with methylphenidate in children with attention-deficit/hyperactivity disorder (ADHD): Evidence from a non-randomised retrospective study.

Huss M, Poustka F, Lehmkuhl G, et al.

Objective. To evaluate long-term effects of methylphenidate (MPH) treatment in ADHD children on the development of nicotine use disorders (SUD-N). Methods. Multisite retrospective non-randomised longitudinal study with 215 ADHD children (diagnosis at 9.2 years of age; reassessment for SUD-N at 21.9 years of age) strictly parallel allocated to MPH treated (n = 106) and drug naive (n = 109) children. Results. There was no difference between the groups with respect to frequency (84% MPH; 89% non-MPH; $\chi^2 = 1.6$; $p = 0.21$) and age of onset for first cigarette smoking (log rank 1.68; $p = 0.19$). Continuous smoking was reached by 51% (MPH) and 61% (non-MPH) of the patients. Survival analyses revealed a small and nominally significant delay in age of onset for continuous smoking in the MPH-group (log rank = 3.85; $p =$

0.049). Nicotine dependency was reached by 20% (MPH) and 27% (non-MPH). Age of onset does not differ between groups (log rank = 2.24; $p = 0.13$). Discussion. Limited evidence due to the non-randomised nature of the study is given that MPH does not induce SUD-N. The data suggests there may be a beneficial effect of MPH on delay of onset for continuous nicotine consumption in ADHD patients. (copyright) 2008 Springer-Verlag.

Emot Behav Difficulties. 2008;13:21-30.

Managing students with ADHD in out-of-class settings.

Kapalka GM.

Many students with Attention-Deficit Hyperactivity Disorder (ADHD) present with behavioral problems that are particularly evident in out-of-class settings (in the lunch room, on the playground, during field trips and special assemblies, etc). Barkley's (1997) technique has been known to help parents handle ADHD children's behaviors in out-of-home situations, and so its effectiveness to reduce problems in out-of-class settings was investigated with 65 teachers of male students previously diagnosed with ADHD. ANOVA revealed that Barkley's technique was effective in reducing the students' behavioral problems in out-of-class settings. This technique is easy to administer and school psychologists will likely find it useful in assisting teachers to handle ADHD students' behavioral problems.

Genes, Brain & Behavior. 2008 Feb;7:53-60.

Association study of the nicotinic acetylcholine receptor $\alpha 4$ subunit gene, CHRNA4, in attention-deficit hyperactivity disorder.

Lee J, Laurin N, Crosbie J, et al.

Attention-deficit hyperactivity disorder (ADHD) is a common childhood-onset psychiatric condition with a strong genetic component. Evidence from pharmacological, clinical and animal studies has suggested that the nicotinic system could be involved in the disorder. Previous studies have implicated the nicotinic acetylcholine receptor $\alpha 4$ subunit gene, CHRNA4, in ADHD. Particularly, a polymorphism in the exon 2-intron 2 junction of CHRNA4 has been associated with severe inattention defined by latent class analysis. In the current study, we used the transmission disequilibrium test (TDT) to investigate four polymorphisms encompassing this region of CHRNA4 for association with ADHD in a sample of 264 nuclear families from Toronto. No significant evidence of biased transmission was observed for any of the marker alleles for ADHD defined as a categorical trait (all subtypes included), although one haplotype showed marginal evidence of under-transmission. No association was found with the ADHD predominantly inattentive subtype or with symptom dimension scores of inattention. On the contrary, nominally significant evidence of association of individual markers was obtained for the ADHD combined subtype and with teacher-rated hyperactivity-impulsivity scores, with the same haplotype being under-transmitted. Based on our results and others, CHRNA4 may be involved in ADHD; however, its role in ADHD symptomatology remains to be clarified. (PsycINFO Database Record (c) 2008 APA, all rights reserved) (from the journal abstract).

J Abnorm Child Psychol. 2008;36:285-96.

Parent-child relationships and ADHD symptoms: A longitudinal analysis.

Lifford KJ, Harold GT, Thapar A.

Evidence both from psychological research and clinical intervention studies suggests that there are bidirectional influences between overt child behavior problems and parent-child relations. Very little research however, has considered the pattern of relations that exists between Attention Deficit Hyperactivity Disorder (ADHD) and the parent-child relationship within a longitudinal context. Using a longitudinal community sample from the United Kingdom which included 194 school aged children (46% male and 54% female) and both parents, this study examined the relationship between child ADHD symptoms and displays of rejection in the parent-child relationship. These relationships were investigated separately for mothers and fathers using cross-lagged panel correlation and reciprocal effects analysis. Mothers and fathers reported on ADHD symptoms and children reported on their feelings of rejection in the mother-child and father-child relationships. Results suggested differences in the direction of effects linking mother- and father-child rejection and child ADHD symptoms; with ADHD symptoms affecting the mother-child relationship and the

converse pattern of effects noted for fathers. Implications for future research focusing on the link between ADHD symptoms and parent-child relationships are discussed. (copyright) 2007 Springer Science+Business Media, LLC.

Int J Lang Commun Disord. 2008;43:181-200.

Visuo-spatial processing and executive functions in children with specific language impairment.

Marton K.

Background: Individual differences in complex working memory tasks reflect simultaneous processing, executive functions, and attention control. Children with specific language impairment (SLI) show a deficit in verbal working memory tasks that involve simultaneous processing of information. Aims: The purpose of the study was to examine executive functions and visuo-spatial processing and working memory in children with SLI and in their typically developing peers (TLD). Experiment 1 included 40 children with SLI (age=5;3-6;10) and 40 children with TLD (age=5;3-6;7); Experiment 2 included 25 children with SLI (age=8;2-11;2) and 25 children with TLD (age=8;3-11;0). It was examined whether the difficulties that children with SLI show in verbal working memory tasks are also present in visuo-spatial working memory. Methods & Procedures: In Experiment 1, children's performance was measured with three visuo-spatial processing tasks: space visualization, position in space, and design copying. The stimuli in Experiment 2 were two widely used neuropsychological tests: the Wisconsin Card Sorting Test - 64 (WCST-64) and the Tower of London test (TOL). Outcomes & Results: In Experiment 1, children with SLI performed more poorly than their age-matched peers in all visuo-spatial working memory tasks. There was a subgroup within the SLI group that included children whose parents and teachers reported a weakness in the child's attention control. These children showed particular difficulties in the tasks of Experiment 1. The results support Engle's attention control theory: individuals need good attention control to perform well in visuo-spatial working memory tasks. In Experiment 2, the children with SLI produced more perseverative errors and more rule violations than their peers. Conclusions: Executive functions have a great impact on SLI children's working memory performance, regardless of domain. Tasks that require an increased amount of attention control and executive functions are more difficult for the children with SLI than for their peers. Most children with SLI scored either below average or in the low average range on the neuropsychological tests that measured executive functions. (copyright) 2008 Royal College of Speech & Language Therapists.

Nicotine Tob Res. 2008;10:117-27.

Interactions between genotype and retrospective ADHD symptoms predict lifetime smoking risk in a sample of young adults.

McClernon FJ, Fuemmeler BF, Kollins SH, et al.

Attention-deficit/hyperactivity disorder (ADHD) symptoms are associated with an increased risk of smoking, and genetic studies have identified similar candidate genes associated with both ADHD and smoking phenotypes. This paper addresses the question of whether ADHD symptoms interact with candidate gene variation to predict smoking risk. Participants were a subsample of individuals from the National Longitudinal Study of Adolescent Health (Add Health), a nationally representative sample of adolescents followed from 1995 to 2002. The sample analyzed included a subset from Add Health of 1,900 unrelated individuals with genotype data. Multiple logistic regression was used to examine relationships between self-reported ADHD symptoms, genotype, and lifetime history of regular smoking. Polymorphisms in the DRD2 gene and, among females, the MAOA gene interacted with retrospective reports of ADHD symptoms in contributing to risk for smoking. Trends were observed for interactions between the DRD4 gene and, among males, the MAOA gene and ADHD symptoms to predict smoking risk. No main effect for any of these polymorphisms was observed. We observed neither main effects nor interactions with CYP2A6, DAT, and SLC6A4 genes. These findings suggest that genotypes associated with catecholamine neurotransmission interact with ADHD symptoms to contribute to smoking risk.

J Abnorm Child Psychol. 2008;36:151-63.

Children with comorbid speech sound disorder and specific language impairment are at increased risk for attention-deficit/hyperactivity disorder.

McGrath LM, Hutaff-Lee C, Scott A, et al.

This study focuses on the comorbidity between attention-deficit/hyperactivity disorder (ADHD) symptoms and speech sound disorder (SSD). SSD is a developmental disorder characterized by speech production errors that impact intelligibility. Previous research addressing this comorbidity has typically used heterogeneous groups of speech-language disordered children. This study employed more precise speech-language diagnostic criteria and examined ADHD symptomatology in 108 SSD children between the ages of 4 and 7 years old with specific language impairment (SLI) (n=23, 14 males, 9 females) and without SLI (n=85, 49 males, 36 females). We also examined whether a subcategory of SSD, persistent (n=39, 25 males, 14 females) versus normalized SSD (n=67, 38 males, 29 females), was associated with ADHD and/or interacted with SLI to predict ADHD symptomatology. Results indicated that participants in the SSD + SLI group had higher rates of inattentive ADHD symptoms than those in the SSD-only and control groups. In addition, an unexpected interaction emerged such that children with SLI and normalized-SSD had significantly higher ADHD inattentive ratings than the other subgroups. A proposed explanation for this interaction is discussed. (copyright) 2007 Springer Science+Business Media, LLC.

J Abnorm Psychol. 2008;117:225-35.

Eating Pathology Among Adolescent Girls With Attention-Deficit/Hyperactivity Disorder.

Mikami AY, Hinshaw SP, Patterson KA, et al.

The authors investigated prospectively assessed eating pathology (body image dissatisfaction and bulimia nervosa symptoms) among an ethnically and socioeconomically diverse sample of adolescent girls with attention-deficit/hyperactivity disorder-combined type (ADHD-C; n = 93), ADHD-inattentive type (ADHD-I; n = 47), and a comparison group (n = 88). The sample, initially ages 6-12 years, participated in a 5-year longitudinal study (92% retention rate). After statistical control of relevant covariates, girls with ADHD-C at baseline showed more eating pathology at follow-up than did comparison girls; girls with ADHD-I were intermediate between these two groups. Baseline impulsivity symptoms, as opposed to hyperactivity and inattention, best predicted adolescent eating pathology. With statistical control of ADHD, baseline peer rejection and parent-child relationship problems also predicted adolescent eating pathology. The association between punitive parenting in childhood and pathological eating behaviors in adolescence was stronger for girls with ADHD than for comparison girls. Results are discussed in terms of the expansion of longitudinal research on ADHD to include female-relevant domains of impairment, such as eating pathology. (copyright) 2008 American Psychological Association.

J Abnorm Child Psychol. 2008;36:165-73.

Personality characteristics associated with persistent ADHD in late adolescence.

Miller CJ, Miller SR, Newcorn JH, et al.

This study focused on the personality characteristics associated with Attention-deficit/Hyperactivity disorder (ADHD) in a longitudinal sample of youth, with a particular focus on differences between those with and without persisting ADHD symptoms. Participants with ADHD (n=90) were initially evaluated when they were 7-11 years old, and re-assessed at 16-22 years of age. Matched control subjects (n=80) were recruited at the time of the follow-up evaluation. At follow-up, the Kiddie-SADS-PL, a semi-structured psychiatric interview, and the NEO-PI, a self-report personality inventory, were administered. Data were analyzed using multivariate analyses of variance (MANOVA). Results indicate that childhood ADHD is associated with lower scores on the NEO Conscientiousness subscale in adolescents/young adults-irrespective of the degree of ADHD persistence. In contrast, ratings of Neuroticism and Agreeableness appear to be more closely linked to adolescent status; those with persisting symptoms only exhibited increased Neuroticism and decreased Agreeableness. These results suggest that ADHD, and the degree to which symptoms persist into adolescence, may be closely linked to personality structure. (copyright) 2007 Springer Science+Business Media, LLC.

Genet Epidemiol. 2008;32:98-107.

Population differences in the international multi-centre ADHD gene project.

Neale BM, Sham PC, Purcell S, et al.

The International Multi-Centre ADHD Gene sample consists of 674 families from eight countries (Belgium, England, Germany, Holland, Ireland, Israel, Spain, and Switzerland) ascertained from clinics for combined-type attention deficit hyperactivity disorder in an offspring. 863 SNPs were successfully genotyped across 47 autosomal genes implicated in psychiatric disorders yielding a single nucleotide polymorphism (SNP) density of approximately one SNP per 2.5 kb. A global test of heterogeneity showed 269 SNPs nominally significant (expected 43). Inclusion of the Israeli population accounted for approximately 70% of these nominally significant tests. Hardy-Weinberg equilibrium tests suggest that combining all these populations would induce stratification, but that the Northern European populations (Belgium, England, Germany, Holland, and Ireland) could be appropriate. Tag SNPs were generated using pair-wise and aggressive tagging from Carlson et al. [2004] and de Bakker et al. [2005], respectively, in each population and applied to the other populations. Cross-population performance across Northern Europe was consistent with within population comparisons. Smaller sample size for each population tended to yield more problems for the generation of aggressive tags and the application of pair-wise tags. Any case-control sample employing an Israeli sample with Northern Europeans must consider stratification. A Northern European tag set, however, appears to be appropriate for capturing the variation across populations. (copyright) 2007 Wiley-Liss, Inc.

Biol Psychiatry. 2008 Feb;63:325-31.

Low blood lead levels associated with clinically diagnosed attention-deficit/hyperactivity disorder and mediated by weak cognitive control.

Nigg JT, Knottnerus GM, Martel MM, et al.

Background: Attention-deficit/hyperactivity disorder (ADHD) and low-level lead exposure are high-prevalence conditions among children, and studies of large populations have suggested that these conditions are related. We examine this relationship in children from a community sample exposed to average background levels of lead who have a diagnosis of ADHD that is established by clinical criteria. Methods: One hundred fifty children ages 8-17 years participated (mean age = 14 years; 53 control subjects, 47 ADHD Predominantly Inattentive type, 50 ADHD-Combined type). Diagnosis was formally established with a semi-structured clinical interview and parent and teacher ratings. Children completed intelligence quotient (IQ) measures and the stop task (a neuropsychological measure). Lead was assayed from whole blood with inductively coupled plasma mass spectrometry. Results: Blood lead levels in this sample closely matched US population exposure averages, with a maximum level of 3.4 µg/dL. Blood lead levels were statistically significantly higher in ADHD-combined type than in non-ADHD control ($p < .05$) children. Blood lead was associated with symptoms of hyperactivity-impulsivity but not inattention-disorganization, after control of covariates. Blood lead levels were linked with a lower IQ ($p < .05$), but IQ did not account for effects on hyperactivity. Instead, hyperactivity mediated effects of lead on IQ. Effects of blood lead on hyperactivity-impulsivity were mediated by poor performance on the stop task. This mediation effect was independent of effects of lead on IQ. Conclusions: Low-level lead exposure might be an important contributor to ADHD. Its effects seem to be mediated by less effective cognitive control, consistent with a route of influence via striatal-frontal neural circuits. (PsychINFO Database Record (c) 2008 APA, all rights reserved) (from the journal abstract).

Pediatr Int. 2008;50:40-44.

Relation of ferritin levels with symptom ratings and cognitive performance in children with attention deficit-hyperactivity disorder.

Oner O, Alkar OY, Oner P.

Background: The aim of the present paper was to investigate the relationship between behavioral symptoms and attentional and executive functions and hematological variables related to iron deficiency and anemia, ferritin, hemoglobin, mean corpuscular volume (MCV), and red cell distribution width (RDW) in children and adolescents with attention deficit-hyperactivity disorder (ADHD). Methods: The sample consisted of 52 ADHD children (42 boys, 10 girls; age 7-13 years; mean (plus or minus) SD, 9.9 (plus or minus) 2.1 years). Conners Parent and Teacher Rating Scales were obtained. The neuropsychological test battery included Wisconsin Card-Sorting Test (WCST), Stroop, Continuous Performance Test, Digit Symbol and Digit Span subtests of the Wechsler Intelligence Scale for Children Revised (WISC-R), and Trail Making Test A and B,

which taps abstraction-flexibility (WCST), sustained attention (CPT), mental tracking and complex attention (WISC-R Digit Span, Digit Symbol, Trail Making A and B) and interference control (Stroop). Multiple linear regression was used to evaluate the relation of ferritin, hemoglobin, MCV, RDW, age, gender, and presence of comorbidity. Results: While seven children had iron deficiency, none of them was anemic. Lower ferritin levels were associated with higher hyperactivity scores in parental ratings. While performance increased with age for most of the neuropsychological tests utilized, ferritin, hemoglobin, MCV and RDW and gender were not significantly related with cognitive performance in this sample. Conclusions: At least for the present clinical sample, ferritin levels might be related with behavioral but not cognitive measures in ADHD cases. (copyright) 2008 Japan Pediatric Society.

J Am Acad Child Adolesc Psychiatry. 2008;47:180-88.

Clonidine for attention-deficit/hyperactivity disorder: I. Efficacy and tolerability outcomes.

Palumbo DR, Sallee FR, Pelham J, et al.

OBJECTIVE: To determine the efficacy and safety of clonidine, used alone or in combination with methylphenidate, in treating attention-deficit/ hyperactivity disorder (ADHD). METHOD: A 16-week, randomized, double-blind, placebo-controlled clinical trial was conducted in 122 children, ages 7 to 12, with any subtype of ADHD, randomly assigned to clonidine, methylphenidate, clonidine in combination with methylphenidate, or placebo according to a 2 x 2 factorial design. In two successive 4-week titration periods, clonidine (or matching placebo) and added methylphenidate (or matching placebo) were adjusted to optimal doses and then continued for 8 weeks. The primary efficacy outcome was changed from baseline to week 16 on the Conners Teachers Abbreviated Symptom Questionnaire. Secondary outcomes included the Conners Abbreviated Symptom Questionnaire for Parents and the Children's Global Assessment Scale. RESULTS: On the Conners Teachers Abbreviated Symptom Questionnaire, clonidine was not found to improve ADHD symptoms, whereas subjects treated with methylphenidate showed significant improvement compared to those not treated with methylphenidate. Subjects treated with clonidine had greater improvements on the Conners Abbreviated Symptom Questionnaire for Parents and Children's Global Assessment Scale, but also a higher rate of sedation compared with subjects not treated with clonidine. CONCLUSIONS: Based on the Conners Teachers Abbreviated Symptom Questionnaire, methylphenidate offers the best combination of efficacy and tolerability for ADHD. Clonidine was well tolerated despite the frequency of sedation and did offer some benefit. Copyright 2008 (copyright) American Academy of Child and Adolescent Psychiatry.

Br J Psychiatry. 2008;192:118-23.

Attention-deficit hyperactivity disorder as a potentially aggravating factor in borderline personality disorder.

Philipsen A, Limberger MF, Lieb K, et al.

Background: Clinical experience suggests that people with borderline personality disorder often meet criteria for attention-deficit hyperactivity disorder (ADHD). However, empirical data are sparse. Aims: To establish the prevalence of childhood and adult ADHD in a group of women with borderline personality disorder and to investigate the psychopathology and childhood experiences of those with and without ADHD. Method: We assessed women seeking treatment for borderline personality disorder (n=118) for childhood and adult ADHD, co-occurring Axis I and Axis II disorders, severity of borderline symptomatology and traumatic childhood experiences. Results: Childhood (41.5%) and adult (16.1%) ADHD prevalence was high. Childhood ADHD was associated with emotional abuse in childhood and greater severity of adult borderline symptoms. Adult ADHD was associated with greater risk for co-occurring Axis I and II disorders. Conclusions: Adults with severe borderline personality disorder frequently show a history of childhood ADHD symptomatology. Persisting ADHD correlates with frequency of co-occurring Axis I and II disorders. Severity of borderline symptomatology in adulthood is associated with emotional abuse in childhood. Further studies are needed to differentiate any potential causal relationship between ADHD and borderline personality disorder. Declaration of interest: None. Funding detailed in Acknowledgements.

Br J Psychiatry. 2008;192:45-51.

Non-traditional lifestyles and prevalence of mental disorders in adolescents in Goa, India.

Pillai A, Patel V, Cardozo P, et al.

Background: Adolescents comprise a fifth of the population of India, but there is little research on their mental health. We conducted an epidemiological study in the state of Goa to describe the current prevalence of mental disorders and its correlates among adolescents aged between 12 and 16 years. Aims: To estimate the prevalence and correlates of mental disorders in adolescents. Method: Population-based survey of all eligible adolescents from six urban wards and four rural communities which were randomly selected. We used a Konkani translation of the Development and Well-Being Assessment to diagnose current DSM-IV emotional and behavioural disorders. All adolescents were also interviewed on socio-economic factors, education, neighbourhood, parental relations, peer and sexual relationships, violence and substance use. Results: Out of 2684 eligible adolescents, 2048 completed the study. The current prevalence of any DSM-IV diagnosis was 1.81%; 95% CI 1.27-2.48. The most common diagnoses were anxiety disorders (1.0%), depressive disorder (0.5%), behavioural disorder (0.4%) and attention-deficit hyperactivity disorder (0.2%). Adolescents from urban areas and girls who faced gender discrimination had higher prevalence. The final multivariate model found an independent association of mental disorders with an outgoing 'non-traditional' lifestyle (frequent partying, going to the cinema, shopping for fun and having a boyfriend or girlfriend), difficulties with studies, lack of safety in the neighbourhood, a history of physical or verbal abuse and tobacco use. Having one's family as the primary source of social support was associated with lower prevalence of mental disorders. Conclusions: The current prevalence of mental disorders in adolescents in our study was very low compared with studies in other countries. Strong family support was a critical factor associated with low prevalence of mental disorders, while factors indicative of adoption of a non-traditional lifestyle were associated with an increased prevalence.

Dev Neuropsychol. 2008;33:62-73.

Retrieval processes in adults with ADHD: A RAVLT study.

Pollak Y, Kahana-Vax G, Hoofien D.

Attention-deficit hyperactivity disorder (ADHD) is associated with memory deficiencies. In the current study we compared different aspects of verbal memory using standard and constructed measures of the Rey auditory verbal learning test (RAVLT). Performance on learning and recognition measures of RAVLT was similar in both ADHD and control groups. In contrast, adults with ADHD committed more double recalls and intrusion errors, indicating inaccurate recall processes. These findings suggest that memory problems in adults with ADHD may be caused by deficient executive processes that support retrieval from memory. Copyright (copyright) 2008 Taylor & Francis Group, LLC.

Dev Psychopathol. 2008;20:121-37.

Do maternal attention-deficit/hyperactivity disorder symptoms exacerbate or ameliorate the negative effect of child attention-deficit/hyperactivity disorder symptoms on parenting?

Psychogiou L, Daley DM, Thompson MJ, et al.

The impact of similarity in parent and child characteristics on the quality of parenting is underresearched. The current study examined the interaction between mother and child attention-deficit/hyperactivity disorder (ADHD) symptoms on parenting. Two hypotheses were tested: the similarity-fit hypothesis, which predicted that parent and child similarity will improve parenting, and the similarity-misfit hypothesis, which predicted the opposite. Study 1 examined the associations between maternal and child ADHD symptoms and child-specific rearing attitudes of 95 mothers with school-aged children. In Study 2 this analysis was extended to more objective observer-rated mother-child interaction and maternal expressed emotion in 192 mothers of preschool children. Child ADHD symptoms were associated with negative maternal comments and maternal ADHD symptoms with negative expressed emotion. In both studies maternal ADHD symptoms appeared to ameliorate the effects of child ADHD symptoms on negative parenting. Parental response to children with high ADHD symptoms was more positive and affectionate when the mother also had high ADHD symptoms. The results support the similarity-fit hypothesis and highlight the importance of considering both child and maternal ADHD symptoms in studies of parenting. (copyright) 2008 Cambridge University Press.

J Neural Transm. 2008;115:317-21.

Allelic variants of SNAP25 in a family-based sample of ADHD.

Renner TJ, Walitza S, Dempfle A, et al.

Altered neurotransmission has been suggested to be a crucial factor in the pathophysiology of attention-deficit/hyperactivity disorder ADHD. Subsequently genes encoding for synaptic proteins have been investigated in candidate gene studies. These proteins mediate the release of neurotransmitters into the synaptic cleft in the process of signal transduction by forming a transient complex, enabling the junction of vesicle and synaptic membrane. One of the core proteins of this complex is the synaptosomal-associated protein 25 (SNAP25). It is one of the most validated candidate genes in ADHD according to meta-analyses. However, differing results were observed in previous studies, some of which were not able to observe association with ADHD. In this study we aimed to investigate association of genetic variants of SNAP25 located in the putative promoter region of SNAP25 and a SNP in intron 8, previously reported to associated with ADHD. A family based design was applied to detect preferential transmission of genetic variants. In our German ADHD sample no preferential transmission of either variant could be observed. Further investigation considering sub-sample analysis regarding response to D-amphetamine could enlighten the role of SNAP25 in ADHD. (copyright) 2008 Springer-Verlag.

J Neural Transm. 2008;115:235-39.

Color perception deficits in co-existing attention-deficit/hyperactivity disorder and chronic tic disorders.

Roessner V, Banaschewski T, Fillmer-Otte A, et al.

Preliminary findings suggest that color perception, particularly of blue-yellow stimuli, is impaired in attention-deficit/hyperactivity disorder (ADHD) as well as in chronic tic disorders (CTD). However, these findings have been not replicated and it is unclear what these deficits mean for the comorbidity of ADHD + CTD. Four groups (ADHD, CTD, ADHD + CTD, controls) of children with similar age, IQ and gender distribution were investigated with the Farnsworth-Munsell 100 Hue Test (FMT) and the Stroop-Color-Word Task using a factorial design. Color perception deficits, as indexed by the FMT, were found for both main factors (ADHD and CTD), but there were no interaction effects. A preponderance of deficits on the blue-yellow compared to the red-green axis was detected for ADHD. In the Stroop task only the 'pure' ADHD group showed impairments in interference control and other parameters of Stroop performance. No significant correlations between any FMT parameter and color naming in the Stroop task were found. Basic color perception deficits in both ADHD and CTD could be found. Beyond that, it could be shown that these deficits are additive in the case of comorbidity (ADHD + CTD). Performance deficits on the Stroop task were present only in the 'pure' ADHD group. Hence, the latter may be compensated in the comorbid group by good prefrontal capabilities of CTD. The influence of color perception deficits on Stroop task performance might be negligible. (copyright) 2007 Springer-Verlag.

Brain Cogn. 2008;66:188-95.

Differences in paper-and-pencil versus computerized line bisection according to ADHD subtype and hand-use.

Rolfe MHS, Hamm JP, Waldie KE.

Two versions of the line bisection task, paper-and-pencil and computerized, were administered to non-medicated children (5-12 years) with and without Attention-Deficit/Hyperactivity Disorder (ADHD). Fifteen children were classified with ADHD-Inattentive type (ADHD-I), 15 were classified with ADHD-Combined or Hyperactive-Impulsive type (ADHD-C), and 15 children served as controls. During the paper-and-pencil task, and irrespective of hand-use, participants with ADHD-C bisected lines with a right bias, whereas participants with ADHD-I showed a leftwards bias. Interestingly, during the computerized version, an opposite pattern of hemineglect was observed with a leftwards bias for participants with ADHD-C and a rightwards bias for participants with ADHD-I. These findings suggest that different task demands are associated with the paper-and-pencil and computerized tasks. The findings also suggest that the two subtypes differ according to their cognitive profile, and possibly differ as to their underlying neural impairment. (copyright) 2007 Elsevier Inc. All rights reserved.

J Neural Transm. 2008;115:249-60.

Deficits in visuo-spatial working memory, inhibition and oculomotor control in boys with ADHD and their non-affected brothers.

Rommelse NNJ, Van Der Stigchel S, Witlox J, et al.

Few studies have assessed visuo-spatial working memory and inhibition in attention-deficit/hyperactivity disorder (ADHD) by recording saccades and consequently little additional knowledge has been gathered on oculomotor functioning in ADHD. Moreover, this is the first study to report the performance of non-affected siblings of children with ADHD, which may shed light on the familiarity of deficits. A total of 14 boys with ADHD, 18 non-affected brothers, and 15 control boys aged 7-14 years, were administered a memory-guided saccade task with delays of three and seven seconds. Familial deficits were found in accuracy of visuo-spatial working memory, percentage of anticipatory saccades, and tendency to overshoot saccades relative to controls. These findings suggest memory-guided saccade deficits may relate to a familial predisposition for ADHD. (copyright) 2008 Springer-Verlag.

Bipolar Disord. 2008;10:56-66.

Retrospective parent report of psychiatric histories: Do checklists reveal specific prodromal indicators for postpubertal-onset pediatric bipolar disorder?

Rucklidge JJ.

Objectives: This study retrospectively investigated the relationship between prodromal symptoms described in the literature for pediatric bipolar disorder (BD) and the diagnosis of BD by comparing adolescents with BD to those in control and attention-deficit hyperactivity disorder (ADHD) groups. **Methods:** Semi-structured interviews [Schedule for Affective Disorders and Schizophrenia for School-Age Children - Present and Lifetime version (K-SADS-PL) and Washington University in St. Louis Kiddie Schedule for Affective Disorders and Schizophrenia (WASH-U-KSADS)] and checklists (Conners' Rating Scales and Child Behavior Checklist) identified participants (13-17years) as either normal controls (NC; n = 28), ADHD (n = 29) or BD (n = 25). Bipolar disorder included BD I, BD II and BD not otherwise specified (NOS). Parents completed a widely used but unvalidated symptom checklist published by Papolos and Papolos (The Bipolar Child: the Definitive and Reassuring Guide to Childhood's Most Misunderstood Disorder) assessing across three developmental periods (preschool, latency, adolescence) for the presence/absence of psychiatric symptoms, many of which have been described in the literature as prodromal to the emergence of manic symptoms. **Results:** While both clinical groups had more psychiatric symptoms than the NC group, more problems were reported in the ADHD group, most of which were symptoms seen as cardinal features of ADHD (e.g., being easily distracted, interrupting, having trouble concentrating). Differences were present by the latency period. Depressed mood was higher in the BD group during latency, and elated mood and fire-setting were higher in the BD group during adolescence. Results were more similar when comparing adolescents with BD only versus those with both ADHD and BD. Frequency of symptoms was comparable regardless of whether or not there was a family history of BD. Frequency of symptoms was also similar across the BD subtypes. **Conclusions:** Using retrospective parent report, a cluster of prodromal psychiatric symptoms specific to BD was not identified, which both questions the utility of a widely used yet unvalidated clinical scale and encourages caution when interpreting information collected via retrospective checklists. Although these data suggest that the presence of prodromal non-specific psychiatric symptoms flags a more global risk for psychopathology, significant limitations exist when using retrospective report and, as such, further prospective research is required to investigate the progression of psychiatric symptoms across childhood disorders. (copyright) 2008 Blackwell Munksgaard.

Child Adolesc Ment Health. 2008;13:41-46.

Evaluation of screening in children referred for an ADHD assessment.

Sayal K, Letch N, El Abd S.

Although guidance from the National Institute for Clinical Excellence recommends the improved identification of children with ADHD, clinical resources are limited. Amongst children (n=119) referred over the question of ADHD, we evaluated the utility of screening (using parent and teacher questionnaires) prior to offering an ADHD assessment. The introduction of screening contributed to an increase in the proportion of assessed children receiving a clinical diagnosis of ADHD. Although screening of referred children prior to assessment can optimise the use of specialist clinical resources in the identification of children with ADHD, false positives remain common. (copyright) 2007 Association for Child and Adolescent Mental Health.

J Am Acad Child Adolesc Psychiatry. 2008;47:199-208.

Dexmethylphenidate extended-release capsules in children with attention-deficit/hyperactivity disorder.

Silva RR, Muniz R, Pestreich L, et al.

OBJECTIVE: This study compared once-daily dexmethylphenidate extended release (D-MPH-ER) 20 mg/day and placebo over 12 hours in children ages 6 to 12 with attention-deficit/hyperactivity disorder (ADHD) in a laboratory classroom setting. **METHOD:** All of the children were stabilized for (greater-than or equal to) 2 weeks on a total dose (nearest equivalent) MPH 40 mg/day or immediate-release D-MPH 20 mg/day before screening. After a practice day, they received 6 days of D-MPH-ER 20 mg/day or placebo at home, returning on day 7 for one dose. Subjects were evaluated at predose and postdose hours 0.5, 1, 3, 4, 5, 7, 9, 10, 11, and 12 and then crossed over to the other treatment arm using the identical protocol. The primary efficacy variable was the change from predose in Swanson, Kotkin, Agler, M-Flynn, and Pelham rating scale (SKAMP) combined score from 1 to 12 hours. Secondary efficacy variables included SKAMP combined score at 0.5 hours, SKAMP subscale scores, and math test results over 12 hours. **RESULTS:** Sixty-eight children were randomized, with 67 completing the study. Onset of action was indicated by a significant difference between D-MPH-ER and placebo at 0.5 hour on the SKAMP combined score ($p = .001$). For efficacy measures, differences from placebo were significant at all points between 0.5 and 12 hours ($p < .001$ to $p = .013$). **CONCLUSIONS:** D-MPH-ER provided sustained improvement in attention, deportment, and academic productivity throughout the 12-hour laboratory day. Copyright 2008 (copyright) American Academy of Child and Adolescent Psychiatry.

J Neural Transm. 2008;115:227-34.

Phonological short-term memory and central executive processing in attention-deficit/hyperactivity disorder with/without dyslexia - Evidence of cognitive overlap.

Tiffin-Richards MC, Hasselhorn M, Woerner W, et al.

Attention-deficit/hyperactivity disorder (ADHD) with/without dyslexia was investigated using a double dissociation design. Neuropsychological performance representing the core deficits of the two disorders was measured in order to test the common deficit hypothesis. Phonological short-term memory, morpho-syntactical language, and central executive processing (manipulating and switching) tasks were administered to four groups of 10-14 year old children (ADHD-only $n = 20$, dyslexia-only $n = 20$, ADHD+dyslexia $n = 20$, and controls $n = 19$). Comparisons of performance on these tasks were carried out using 2 (ADHD yes/no) \times 2 (dyslexia yes/no) factorial analyses of variance and covariance. Significant main effects were found for dyslexia (language processing functions) and for ADHD (EF switching). In the case of the EF manipulating a main effect for both dyslexia and ADHD was revealed. Effect sizes of mean performance indicated that all three impaired groups shared a common deficit in working memory which could reflect a cognitive overlap partly explaining the high rate of co-occurring dyslexia and ADHD. (copyright) 2007 Springer-Verlag.

Child Neuropsychol. 2008;14:42-59.

Motor response inhibition and execution in the stop-signal task: Development and relation to ADHD behaviors.

Tillman CM, Thorell LB, Brocki KC, et al.

The main aim of this study was to investigate the developmental course of motor response inhibition and execution as measured by the stop-signal task in a population-based sample of 525 4- to 12-year-olds. A further aspiration of the study was to enhance the limited knowledge on how the various stop-signal measures relate to ADHD behaviors in a normal sample. We also wanted to contribute to the theoretical understanding of the various stop-signal measures by examining the relations between the stop-signal measures and performance on tasks reflecting other aspects of response inhibition and execution. Our results showed that the ability to inhibit as well as to execute a motor response as measured by the stop-signal task improved with age during childhood. Of specific interest are the findings suggesting that this task captures the development of motor response inhibition in the late preschool years (age 5 years). Both of the inhibition measures derived from the stop-signal task (i.e., SSRT and probability of inhibition) related significantly to teacher ratings of inattention as well as to performance on tasks tapping other aspects of inhibition. The data provided by this study have thus contributed to the scarce knowledge on early development of motor response inhibition, as well as suggested that the stop-signal task may be a valuable

tool for capturing deficient motor response inhibition in ADHD behaviors in normal samples. (copyright) 2007 Psychology Press.

Eur Neuropsychopharmacol. 2008 Feb;18:79-86.

CYP2D6 metabolizer status and atomoxetine dosing in children and adolescents with ADHD.

Trzepacz PT, Williams DW, Feldman PD, et al.

To determine whether physicians can adequately titrate atomoxetine without knowing genotype status for hepatic cytochrome P-sub(450) 2D6, we pooled data from two open-label studies of atomoxetine in children and adolescents with attention-deficit/hyperactivity disorder. Patients were assessed weekly up to 10 weeks and doses titrated for efficacy and tolerability at the discretion of investigators (max. 1.8 mg/kg/d). Mean dose was 0.1 mg/kg/d lower in poor metabolizer (PM) patients (n = 87) than extensive metabolizers (EMs, n = 1239). PMs demonstrated marginally better efficacy on the ADHDRS-IV-Parent:Inv and had comparable safety profiles, except for a 4.0-bpm greater increase in mean pulse rate and a 1.0-kg greater weight loss. Changes from baseline in Fridericia QTc did not differ between groups or correlate with dose in PMs. Results suggest genotyping is unnecessary during routine clinical management, because investigators were able to dose atomoxetine to comparable efficacy and safety levels in EMs and PMs without knowledge of genotype metabolizer status. (PsychINFO Database Record (c) 2008 APA, all rights reserved) (from the journal abstract).

J Neural Transm. 2008;115:187-90.

Children and adolescents with obsessive-compulsive disorder and comorbid attention-deficit/hyperactivity disorder: Preliminary results of a prospective follow-up study.

Walitza S, Zellmann H, Irblich B, et al.

In the present study, we have investigated the influence of comorbid attention deficit hyperactivity disorder (ADHD) on early onset obsessive compulsive disorder (OCD). For that purpose, we compared 20 patients with "OCD with ADHD" and 20 randomly selected patients with "OCD without ADHD". "OCD with ADHD" patients tended to show an earlier age of OCD onset, a higher severity of symptoms and a higher persistence rate than OCD patients without ADHD. Both groups appear to develop different patterns of comorbid disorders. (copyright) 2008 Springer-Verlag.

Am J Phys Med Rehabil. 2008;87:85-99.

The effects of bromocriptine on attention deficits after traumatic brain injury: A placebo-controlled pilot study.

Whyte J, Vaccaro M, Grieb-Neff P, et al.

OBJECTIVE: To evaluate the effects of bromocriptine on a variety of aspects of attention, ranging from laboratory-based impairment measures to caregiver ratings and work productivity, in individuals after traumatic brain injury. **DESIGN:** Twelve adults with moderate to severe traumatic brain injury and attention complaints in the postacute phase of recovery were enrolled in a 6-wk double-blind, placebo-controlled, crossover study of bromocriptine, titrated to a dose of 5 mg twice a day. A wide range of attentional measures was administered weekly, including computerized and paper-and-pencil tests of attention, videotaped records of individual work in a distracting environment, real-time observational scoring of attentiveness in a classroom environment, and caregiver and clinician ratings of attentiveness. Data from these 12 participants were used to identify attentional dimensions suggestive of a treatment effect for independent replication. **RESULTS:** The effects of bromocriptine on 13 previously identified attentional factors and 13 individual performance scores were assessed via the Wilcoxon signed ranks test, using a relaxed probability cutoff of 0.20 to select those to be studied in a larger replication sample. Only two factor scores and one individual score met the cutoff, and all of these showed trends toward worse performance on bromocriptine than on placebo. A more detailed investigation of bromocriptine's effect on divided attention was also conducted, but the previously reported finding of a beneficial effect on this domain was not replicated. Blood pressure was marginally lower on bromocriptine than on placebo. In view of the lack of cognitive benefit and the fact that several participants experienced possible or probable drug side effects, we did not pursue a larger replication at this drug dose. **CONCLUSIONS:** Bromocriptine in a dose of 5 mg, given

twice a day to individuals with attentional complaints after TBI, does not seem to enhance attentional skills, and it may be associated with an excess of adverse events. It is not clear whether intermittent dosing or lower doses might confer benefit. (copyright) 2008 Lippincott Williams & Wilkins, Inc.

Ann Pharmacother. 2008;42:24-31.

Utilization of pharmacologic treatment in youths with attention deficit/hyperactivity disorder in Medicaid database.

Winterstein AG, Gerhard T, Shuster J, et al.

BACKGROUND: Little is known about longitudinal changes in drug utilization in attention-deficit/hyperactivity disorder (ADHD). OBJECTIVE: To describe longitudinal trends in ADHD drug utilization and explore demographic differences among youths eligible for a large Southern state Medicaid program. METHODS: A cross-sectional and longitudinal analysis of 10 years of claims data for all Medicaid beneficiaries younger than 20 years of age with 6 months or more of continuous insurance (N = 2,131,953) was conducted. Annual prevalence, incidence, and persistence in ADHD medication use (stimulants and atomoxetine) were estimated based on pharmacy claims and clinician-reported ADHD diagnosis. RESULTS: ADHD prevalence increased 1.70-fold (95% CI 1.67 to 1.73) from 3.10% (21,904 of 705,573 beneficiaries) in fiscal year 1995-1996 to 5.27% (41,681 of 790,338) in 2003-2004, paralleled by a 1.84-fold (95% CI 1.81 to 1.87) increase in drug use to 4.63%. In 2003-2004, 0.89% of youths were diagnosed and newly started on drugs, reflecting a 1.38-fold (95% CI 1.33 to 1.43) increase over 1995-1996. One in five white males between the ages of 10 and 14 years (19.24%; 95% CI 18.81 to 19.67) received ADHD medication in 2003-2004. Males continued to be more likely diagnosed and treated than females (prevalence ratio [PR] in 2003-2004 = 2.96; 95% CI 2.90 to 3.03 vs 3.82; 95% CI 3.69 to 3.96 in 1995-1996), as were whites when compared with Hispanics (PR in 2003-2004 = 2.65; 95% CI 2.57 to 2.73 vs 3.78; 95% CI 3.57 to 3.99 in 1995-1996) and blacks (PR in 2003-2004 = 1.81; 95% CI 1.76 to 1.85 vs 2.00; 95% CI 1.93 to 2.07 in 1995-1996). The most common starting age throughout the study period was 5-9 years, with 2.45% (95% CI 2.37 to 2.52) new ADHD drug users in 2003-2004, but largest increases in prevalence were observed in adolescents 15-19 years of age, with 2.47% (95% CI 2.38 to 2.55) in 2003-2004 compared with 0.45% (95% CI 0.41 to 0.49) in 1995-1996. Medication persistence varied, with only 49.9% (95% CI 49.4 to 50.5) of new users receiving drugs after 1 year, with yet another 17.2% (95% CI 16.4 to 18.0) continuing for 5 years or more. CONCLUSIONS: ADHD drug utilization continues to increase due to steady increases in diagnosis and chronic use of the drugs over several years. While racial, ethnic, and sex differences persist, the age distribution of drug users has shifted toward older children. These findings emphasize the need for studies that analyze determinants of treatment as well as outcomes, both benefits and risks, associated with long-term medication use.

Prog Neuro-Psychopharmacol Biol Psychiatry. 2008;32:243-48.

A case-control association study of the polymorphism at the promoter region of the DRD4 gene in Korean boys with attention deficit-hyperactivity disorder: Evidence of association with the - 521 C/T SNP.

Yang JW, Jang WS, Hong SD, et al.

Recent genetic studies at the 5' end of the dopamine D4 receptor (DRD4) gene have identified several polymorphisms having a possible relationship with attention deficit-hyperactivity disorder (ADHD). This study examined the association between the - 521 and - 376 promoter single nucleotide polymorphisms (SNPs) of the DRD4 gene and ADHD through a case-control association study in Korean boys, who constitute a single ethnic population. Ninety-four ADHD and ninety-five control boys were enrolled in this study. All of the ADHD subjects completed a comprehensive and standardized diagnostic and psychological evaluation battery including the ADHD Rating Scale-IV (ARS). Genotyping for the 2 promoter SNPs was performed. There were significant differences in the genotype and allele frequencies of the - 521 C/T SNP between the ADHD and control groups ((chi)² = 6.28, p = 0.043 and (chi)² = 6.22, p = 0.013, respectively). However, the distribution of the - 376 C/T genotypes and alleles were similar in the ADHD and control groups. The subtypes of ADHD were not related to either of these two SNPs. In the ADHD subjects, the - 521 TT genotype group had a higher score in the inattentive subscale and a lower score in the hyperactive subscale of the parents version of ARS, although these differences did not attain statistical significance (p = 0.146, p = 0.082). In conclusion, there was a significant association between the - 521 C/T SNP and ADHD in Korean boys. These results suggest a role of the - 521 C/T SNP in the susceptibility for ADHD. (copyright) 2007 Elsevier Inc. All rights reserved.

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Serotonergic functioning and trait-impulsivity in attention-deficit/hyperactivity-disordered boys (ADHD): Influence of rapid tryptophan depletion.

Zepf FD, Stadler C, Demisch L, et al.

Objective: The present study investigated the effects of rapid tryptophan depletion (RTD) and the ensuing reduction of central nervous levels of serotonin (5-HT) on reactive aggression with respect to personality factors comprising aspects of trait-impulsivity and -aggression in boys with attention-deficit/hyperactivity-disorder (ADHD). Methods: Twenty-two male adolescent patients with ADHD received the RTD test on one day, and, on another day a tryptophan balanced placebo in a double-blind within-subject crossover design. Impulsive personality factors and trait-impulsivity were assessed in advance of the study. Aggression was provoked using a competitive reaction time game 270 min after RTD/placebo intake. Results: RTD had a significant effect on increased aggressive behaviour with which low-grade impulsive patients responded. High-grade impulsive patients were not affected by RTD or even responded with increased aggressive behaviour while receiving placebo treatment. Conclusions: The present study supports the hypothesis that 5-HT functioning in ADHD patients influences reactive aggression depending on aspects of trait-impulsivity. Future studies are necessary in order to detect the specific influence of ADHD as regards the relevance to 5-HT-induced changed aggressive responding. Copyright (copyright) 2007 John Wiley & Sons, Ltd.

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Fisher discriminative analysis of resting-state brain function for attention-deficit/hyperactivity disorder.

Zhu CZ, Zang YF, Cao QJ, et al .

In this study, a resting-state fMRI based classifier, for the first time, was proposed and applied to discriminate children with attention-deficit/hyperactivity disorder (ADHD) from normal controls. On the basis of regional homogeneity (ReHo), a mapping of brain function at resting state, PCA-based Fisher discriminative analysis (PC-FDA) was trained to build a linear classifier. Permutation test was then conducted to identify the brain areas with the most significant contribution to the final discrimination. Experimental results showed a correct classification rate of 85% using a leave-one-out cross-validation. Moreover, some highly discriminative brain regions, like the prefrontal cortex and anterior cingulate cortex, well confirmed the previous findings on ADHD. Interestingly, some important but less reported regions such as the thalamus were also identified. We conclude that the classifier, using resting-state brain function as classification feature, has potential ability to improve current diagnosis and treatment evaluation of ADHD. (copyright) 2007

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