



ADHD

ATTENTION DEFICIT HYPERACTIVITY DISORDER


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Effects of atomoxetine on attention-deficit/hyperactivity disorder in clinical pediatric treatment settings: A naturalistic study.

Bakken RJ, Paczkowski M, Kramer HP, et al.

Background: Observational studies involving atomoxetine hydrochloride in the treatment of attention-deficit/hyperactivity disorder (ADHD) complement randomized controlled trials by assessing treatment effects in a usual-care setting and including a more heterogeneous patient population. Objective: To provide data on the effectiveness of atomoxetine in a naturalistic treatment setting according to both physician and parent ratings. Design and methods: A prospective, observational (non-interventional), longitudinal, open-label study of patients (N = 627; mean age = 11 years) with ADHD (from 60 physicians' offices in the United States and Puerto Rico) whose physicians had decided to prescribe atomoxetine either as initial treatment or after trying another ADHD treatment (e.g., stimulants, antidepressants). Patients with a baseline visit and one post-baseline visit for up to 1 year were eligible. Atomoxetine administration, dosing, and timing of follow-up visits were at each physician's discretion. Physicians evaluated the effectiveness of atomoxetine using a single-item rating scale: the Physician Global Impression: ADHD Severity (PGI-ADHD-S) scale. Results: The average reported duration of treatment was 21.2 (range 0-89) weeks. Over this period, treatment significantly lowered ADHD severity compared with baseline, with a mean change of -0.91 (95% confidence interval: -1.00 to -0.82; $p < 0.001$) on the PGI-ADHD-S scale. Physician-rated improvement was more marked in patients with more severe ADHD at baseline ($p < 0.001$). Most patients (59-69%) experienced consistent symptom control at all times of the day. ADHD severity was improved similarly in patients across comorbid conditions (e.g., anxiety, depression, learning disorders), chief complaints (e.g., school problems, emotional problems), and prior treatment with stimulants or other medications. By parent reports, 49% of patients had improved grades following atomoxetine therapy while 35% stayed the same, and improvement in behavior (according to parents' ratings) occurred in 49% of patients following atomoxetine therapy, whereas 31% stayed the same. Conclusion: Data captured in this study support the conclusion that atomoxetine was effective in reducing symptom severity, and improving progress toward treatment goals, in children and adolescents with ADHD treated in a naturalistic treatment setting. However, given the open-label, observational (non-interventional) design of this study, certain biases cannot be excluded. (copyright) 2008 Librapharm Limited All rights reserved.

Mol Psychiatry. 2008;13:514-21.

A high-density SNP linkage scan with 142 combined subtype ADHD sib pairs identifies linkage regions on chromosomes 9 and 16.

Asherson P, Zhou K, Anney RJL, et al.

As part of the International Multi-centre ADHD Genetics project we completed an affected sibling pair study of 142 narrowly defined Diagnostic and Statistical Manual of Mental Disorders, fourth edition combined type attention deficit hyperactivity disorder (ADHD) proband-sibling pairs. No linkage was observed on the most established ADHD-linked genomic regions of 5p and 17p. We found suggestive linkage signals on chromosomes 9 and 16, respectively, with the highest multipoint nonparametric linkage signal on chromosome 16q23 at 99 cM (log of the odds, LOD=3.1) overlapping data published from the previous

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.

UCLA (University of California, Los Angeles) (LOD>1, ~95 cM) and Dutch (LOD>1, ~100 cM) studies. The second highest peak in this study was on chromosome 9q22 at 90 cM (LOD=2.13); both the previous UCLA and German studies also found some evidence of linkage at almost the same location (UCLA LOD=1.45 at 93 cM; German LOD=0.68 at 100 cM). The overlap of these two main peaks with previous findings suggests that loci linked to ADHD may lie within these regions. Meta-analysis or reanalysis of the raw data of all the available ADHD linkage scan data may help to clarify whether these represent true linked loci. (copyright) 2008 Nature Publishing Group All rights reserved.

Behav Cognitive Psychother. 2008;36:193-209.

Mindfulness training for adolescents with externalizing disorders and their parents.

Bogels S, Hoogstad B, Van Dun L, et al.

Mindfulness training was evaluated as a new treatment for attention and impulsivity problems in adolescents with a variety of different externalizing disorders: attention deficit-hyperactivity disorder, oppositional-defiant and/or conduct disorder, and autism spectrum disorder if characterized by externalizing problem behaviour. It was argued that the large overlap between these three disorders may be partially explained by common underlying attention and behaviour control deficits. Fourteen clinically referred adolescents suffering from externalizing disorders followed mindfulness training in a group format. Parallel, their parents received mindful parenting training. Adolescents and their parents were measured before and after waitlist, after 8-week training, and at 8-week follow-up. No improvement occurred during waitlist on most variables. After mindfulness training, children self-reported substantial improvement on personal goals, internalizing and externalizing complaints, attention problems, happiness, and mindful awareness, and performed better on a sustained attention test. Likewise, parents reported improvement on children's goals, externalizing and attention problems, self-control, attunement to others and withdrawal. In addition, parents improved on their own goals. Improvement was maintained 8 weeks after the training. Consistent with mindfulness theory, increased child awareness after training predicted longer-term improvement in parent-rated child symptoms. Concomitant parent and child mindfulness training appears to be a promising approach for clinic-referred adolescents with attention and impulsivity problems. (copyright) 2008 British Association for Behavioural and Cognitive Psychotherapies

Dtsch Z Akupunkt. 2008;51:47-50.

ADS in a young patient: The lifestory as key to success.

Bohlayer R.

Disorders of learning and functioning are not mentioned in classical Chinese Medicine. There are descriptions in modern textbooks of the hyperkinetic syndrome (1,2,3). The following case study shows how ADS can be integrated into the model of Zang-Fu and its Spirit-Shen aspects. A necessary condition of successful treatment with the methods of Chinese Medicine is the inclusion in the diagnosis and therapy of fairly uniform basic symptoms, life stressors and accompanying psychological symptoms.

Medgenmed Medscape Gen Med. 2008;10.

Abuse of medications employed for the treatment of ADHD: Results from a large-scale community survey.

Bright GM.

Bright, G.M., Adolescent Health Center, Midlothian, VA, United States

Objective: The objective is to assess abuse of prescription and illicit stimulants among individuals being treated for attention-deficit/ hyperactivity disorder (ADHD). Methods: A survey was distributed to patients enrolled in an ADHD treatment center. It included questions designed to gain information about demographics; ADHD treatment history; illicit drug use; and misuse of prescribed stimulant medications, including type of stimulant medication most frequently misused or abused, and how the stimulant was prepared and administered. Results: A total of 545 subjects (89.2% with ADHD) were included in the survey. Results indicated that 14.3% of respondents abused prescription stimulants. Of these, 79.8% abused short-acting agents; 17.2% abused long-acting stimulants; 2.0% abused both short- and long-acting agents; and 1.0% abused other agents. The specific medications abused most often were mixed amphetamine salts

(Adderall; 40.0%), mixed amphetamine salts extended release (Adderall XR; 14.2%), and methylphenidate (Ritalin; 15.0%), and the most common manner of stimulant abuse was crushing pills and snorting (75.0%). Survey results also showed that 39.1% of respondents used nonprescription stimulants, most often cocaine (62.2%), methamphetamine (4.8%), and both cocaine and amphetamine (31.1%). Choice of illicit drug was based on rapidity of high onset (43.5%), ease of acquisition. (40.7%), ease of use (10.2%), and cost (5.5%). Conclusions: The risks for abuse of prescription and illicit stimulants are elevated among individuals being treated in an ADHD clinic. Prescription agents used most often are those with pharmacologic and pharmacokinetic characteristics that provide a rapid high. This suggests that long-acting stimulant preparations that have been developed for the treatment of ADHD may have lower abuse potential than short-acting formulations. (copyright) 2008 Medscape.

Psychiatry Clin Neurosci. 2008;62:160-66.

Patterns of temperament and character in a clinical sample of Korean children with attention-deficit hyperactivity disorder.

Cho SC, Hwang JW, Lyoo IK, et al.

Aims: The purpose of the present study was to assess patterns of temperament and character in a clinical sample of Korean children with attention-deficit hyperactivity disorder (ADHD) and to investigate the relationship between patterns of temperament and character and the severity of ADHD symptoms. Methods: Fifty-one children who met DSM-IV criteria for ADHD and 51 age- and sex-matched healthy comparison subjects completed the Junior Temperament and Character Inventory (JTCI) and the DuPaul's ADHD Rating Scale (ARS-IV). Results: Children with ADHD had significantly higher scores of Novelty Seeking and lower scores of Self-directedness in both parents' rating and children's self-rating. In addition, low Self-directedness scores predicted higher total scores of ARS-IV. Conclusions: In a clinical sample of Korean children with ADHD, a distinct pattern of temperament and character was found. The current findings suggest that low Self-directedness may be related to the severity of ADHD symptoms. (copyright) 2008 The Authors.

Int J Psychophysiol. 2008;68:186-92.

Effects of imipramine hydrochloride on the EEG of children with Attention-Deficit/Hyperactivity Disorder who are non-responsive to stimulants.

Clarke AR, Barry RJ, McCarthy R, et al.

Although stimulant medications are the most commonly-used treatments for Attention-Deficit/Hyperactivity Disorder (AD/HD), as many as 20% of treated children do not respond clinically to stimulants. One non-stimulant medication that has been widely used when the stimulants fail is a tricyclic antidepressant, imipramine hydrochloride. This study investigated the effects of imipramine on the EEG of children with AD/HD who were poor responders to dexamphetamine and ritalin, but who showed clinical improvement on a six month trial of imipramine. An initial pre-medication EEG was recorded during an eyes-closed resting condition, with data Fourier transformed to provide absolute and relative power estimates for the delta, theta, alpha and beta bands. A second EEG was recorded at the end of the imipramine trial. Compared to controls, the unmedicated AD/HD children had significant global increases in absolute and relative theta, with decreased global absolute and relative alpha, increased posterior relative delta, and decreased posterior absolute beta. No change in the EEG was found as a result of administering the medication. These results suggest that good responders to imipramine have an underlying EEG abnormality different from that in children who respond to the stimulants, and that an initial pre-treatment EEG may be useful in selecting a trial medication. However, as no change in the EEG was found with imipramine, it is unlikely that the EEG will be useful in evaluating responsivity to this medication. (copyright) 2008.

Burns. 2008;34:546-48.

Small burns among out-patient children and adolescents with attention deficit hyperactivity disorder.
Ghanizadeh A.

There is a controversy about the association of attention deficit hyperactivity disorder (ADHD) with burns among children. Whereas some studies of children with burns have suggested ADHD as a risk factor for thermal injury, others have reported it as protective against such injury. This case-control study was designed to assess the association of ADHD with burns. The case group consisted of 123 children with ADHD diagnosed by the standardised diagnostic criteria of DSM-IV. The comparison group comprised of 100 children without ADHD. Children and their carers were asked about the frequency of burns during the past year. A significant association was found between frequency of burn and group, but no such association was found with sibling number, rank of birth of the child or mother's occupation. The incidence of burns among children with ADHD was higher than among the control group. (copyright) 2007 Elsevier Ltd and ISBI.

Arch Pediatr Adolesc Med. 2008;162:330-35.

Parent-reported sleep problems during development and self-reported anxiety/depression, attention problems, and aggressive behavior later in life.

Gregory AM, Van Der Ende J, Willis TA, et al.

Objective: To examine associations between sleep problems during development and subsequent emotional and behavioral difficulties. Design: Prospective longitudinal study. Setting: The Dutch province of Zuid-Holland. Participants: At time 1 of data collection, a representative sample of 2076 children aged 4 to 16 years participated in the study. Outcome Measures: Parents rated their children's (4-19 years old) sleep at 5 assessments by completing the Child Behavior Checklist. Participants reported on their own emotional and behavioral symptoms at a later assessment (when aged 18-32 years) by completing the Young Adult Self-Report. Results: After adjusting for sex, age, socioeconomic status, and parent-rated scores through development for the difficulty being predicted, having any parental reports of sleeping less than others was a risk indicator of high scores on the Anxious/Depressed scale (odds ratio, 1.43; 95% confidence interval, 1.07-1.90; $P=.01$) and the Aggressive Behavior scale (odds ratio, 1.51; 95% confidence interval, 1.13-2.02; $P=.005$). There was some (albeit less robust) support for links between other reported sleep difficulties and later problems. Parental reports of sleeping more than others and nightmares were not associated with later difficulties. Conclusions: Physicians should inquire about sleep problems during child development and should be aware that some, but perhaps not others, may constitute risk indicators of later difficulties. (copyright)2008 American Medical Association. All rights reserved.

J Child Neurol. 2008;23:477-81.

Neuropsychiatric disorders in males with duchenne muscular dystrophy: Frequency rate of attention-deficit hyperactivity disorder (ADHD), autism spectrum disorder, and obsessive-compulsive disorder.

Hendriksen JGM, Vles JSH.

Using a questionnaire-based study, we assessed the parent-reported prevalence of attention-deficit hyperactivity disorders (ADHDs), autism spectrum disorders, and obsessive-compulsive disorders in a group of 351 males with Duchenne muscular dystrophy. Of the 351 males with Duchenne muscular dystrophy, 11.7% were reported to have a comorbid diagnosis of ADHD, 3.1% had autism spectrum disorder, and 4.8% had obsessive-compulsive disorder. It can be concluded that the incidence of these neuropsychiatric disorders is higher in Duchenne males than in the normal population. This finding, together with recent reports on the higher prevalence of cognitive and learning problems in Duchenne, supports the view that Duchenne muscular dystrophy is not only a muscular disorder but also a disorder affecting the brain. It is important for clinical practice to take in account this heightened association. More research is needed to examine this association and its consequences. (copyright) SAGE Publications, Inc. 2008.

Arch Pediatr Adolesc Med. 2008 Apr;162:323-29.

Actigraphic and parental reports of sleep difficulties in children with attention-deficit/hyperactivity disorder.

Hvolby A, Jorgensen J, Bilenberg N.

OBJECTIVES: To describe actigraphically detected and parent-reported sleep problems in nonmedicated children with attention-deficit/hyperactivity disorder (ADHD); to clarify whether or not comorbid oppositional defiant disorder contributes to sleep difficulties; and to compare objectively measured sleep with the parents' observations of sleep. **DESIGN:** Case-control study. **SETTING:** A child and adolescent psychiatric department of a teaching hospital. **PARTICIPANTS:** Two hundred six children aged 5 to 11 years, including 45 with a diagnosis of ADHD, 64 with a diagnosis of other psychiatric diagnoses (psychiatric control group), and 97 healthy control subjects (reference group). Intervention Sleep was monitored by parent-completed sleep diaries and 5 nights of actigraphy. We used a semistructured interview to diagnose psychiatric disorders according to Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition) criteria. **MAIN OUTCOME MEASURES:** Actigraphically measured sleep variables and parent-estimated sleep by diary. **RESULTS:** We found that children with ADHD have significantly longer sleep onset latency and a more irregular sleep pattern than the psychiatric control or healthy reference subjects. Average sleep onset latencies were 26.3 minutes in the ADHD group, 18.6 minutes in the psychiatric control group, and 13.5 minutes in the healthy reference group. There was no apparent relationship between sleep problems and comorbid oppositional defiant disorder. We found discrepancies between the objectively measured sleep variables and those reported by parents, who overestimated sleep onset latency. **CONCLUSIONS:** The results of this study allow us to conclude that some children with ADHD have impaired sleep that cannot be referred to comorbid oppositional defiant disorder. However, it is important to make an in-depth review of the sleep complaints, as the problem may be a product of the parents' perception rather than the child's actual experience.

Neuropsychologia. 2008;46:1532-41.

Dissociation in response to methylphenidate on response variability in a group of medication naive children with ADHD.

Johnson KA, Barry E, Bellgrove MA, et al.

Increased variability in reaction time (RT) has been proposed as a cardinal feature of attention deficit hyperactivity disorder (ADHD). Increased variability during sustained attention tasks may reflect inefficient fronto-striatal and fronto-parietal circuitry; activity within these circuits is modulated by the catecholamines. A disruption to dopamine signaling is suggested in ADHD that may be ameliorated by methylphenidate (MPH). This study investigated the effects of MPH administration on the variability in RT and error performance on a sustained attention task of a group of 31 medication naive children with ADHD, compared with 22 non-ADHD, non-medicated, control children. All children performed the fixed-sequence sustained attention to response task (SART) at two time-points: at baseline and after six weeks. The children with ADHD were tested when medication naive at baseline and after six weeks of treatment with MPH and whilst on medication. The medication naive children with ADHD performed the SART with greater errors of commission and omission when compared with the control group. They demonstrated greater standard deviation of RT and fast moment-to-moment variability. They did not differ significantly from the control group in terms of slow variability in RT. MPH administration resulted in reduced and normalised levels of commission errors and fast, moment-to-moment variability in RT. MPH did not affect the rate of omission errors, standard deviation of RT or slow frequency variability in RT. MPH administration may have a specific effect on those performance components that reflect sustained attention and top-down control rather than arousal. (copyright) 2008 Elsevier Ltd. All rights reserved.

Child Care Health Dev. 2008;34:380-90.

Efficacy of the incredible years programme as an early intervention for children with conduct problems and ADHD: Long-term follow-up.

Jones K, Daley D, Hutchings J, et al.

Background: This study examined the long-term efficacy of the Incredible Years (IY) BASIC Parenting Programme delivered as a preventive intervention with parents of pre-school children who display signs of attention deficit hyperactivity disorder (ADHD) and conduct problems. Families were followed up after the completion of a controlled trial with 11 Sure Start areas in North and Mid-Wales and North West England.

Methods: Participants in the study were 50 pre-school children whose parents had received the intervention. Child ADHD symptoms were assessed at baseline, at follow-up one (6months after baseline); at follow-up two (12months after baseline); and at follow-up three (18 months after baseline). Families in the original waiting-list control group were not assessed after follow-up one as they had subsequently received the same intervention. Results: The significant post-intervention improvements in child ADHD symptoms evident at follow-up one were maintained over time, as demonstrated by statistical and clinical stability of measures. No significant differences were found for ADHD symptoms across each follow-up, indicating that the gains made post intervention were maintained for at least 12 months, with 57% of the sample maintaining scores below the clinical cut-off on the Conners. Eighty-six, 58, and 30 per cent respectively had maintained at least a modest, large, or very large improvement in ADHD symptoms at follow-up three. Conclusions: Findings from this study suggest that the IY psychosocial treatment programme is a valuable intervention in the longer term for many pre-school children displaying early signs of ADHD. (copyright) 2008 The Authors Journal compilation (copyright) 2008 Blackwell Publishing Ltd.

Neuroendocrinol Lett. 2008;29:246-51.

Some ADHD polymorphisms (in genes DAT1, DRD2, DRD3, DBH, 5-HTT) in case-control study of 100 subjects 6-10 age.

Kopeckova M, Paclt I, Petrasek J, et al.

Background: Pharmacological approach is the most effective way of treatment of ADHD and its early application prevents from the progress of secondary disorders. The study on present neurotransmitter systems in pathology of ADHD can be helpful in selecting appropriate drug, since there are used various substances with different mechanisms of functioning in treatment of the hyperkinetic syndrome. Method: Within our study there were selected the genes of dopaminergic (DRD2, DRD3, DAT1), noradrenergic (DBH) and serotonergic (5-HTT) systems. With the use of molecular-genetic methods based on association strategy "case-control" there were analysed genes including 11 polymorphisms. The presence of risk alleles was examined in comparison of the sample of 100 ADHD children to a control group of another 100 subjects, who were checked by child psychiatrists and examined with the Conners test in order to exclude eventual cases with ADHD symptoms. Results: Our research suggests the association of some genes with ADHD. It could be concluded: 1) the risk of ADHD is significantly increased in the presence of one risk allele in genes DRD2 (O.R.= 7,5), 5-HTT (O.R.= 2,7) and DAT1 (O.R.= 1,6). 2) The risk of ADHD is significantly increased at homozygotes for risk alleles in genes DRD2 (O.R.= 54,8), 5-HTT (O.R.= 6,7) and DAT1 (O.R.= 6,6). For polymorphisms G444A and C1603T in DBH, which were detected by univariant analysis, haplotype analysis was performed and resulted in conclusion that: 3) the risk of ADHD is significantly increased in the presence of allele DBH +444A as well as in the presence of allele DBH +1603T (O.R.= 15). (copyright) 2008 Neuroendocrinology Letters.

Am J Med Genet Part B Neuropsychiatr Genet. 2008;147:370-74.

The monoamine oxidase B gene exhibits significant association to ADHD.

Li J, Wang Y, Hu S, et al.

Attention deficit hyperactivity disorder (ADHD) is a common neuropsychiatric condition with strong genetic basis. Recent work in China indicated that ADHD may be linked to Xp1-2 in the Han Chinese population. The gene encoding monoamine oxidase B (MAOB), the main enzyme degrading dopamine in the human brain, is located in this region. The current study sequenced the exons and the 5' and 3' flanking regions of the MAOB gene and found four common variants including 2276C>T and 2327C>T in exon 15, rs1799836 in intron 13 and rs1040399 in 3'-UTR. We assessed the association of these variants with ADHD in 548 trios collected from 468 males and 80 females probands. TDT analysis showed that alleles of each polymorphism were preferentially transmitted to probands (rs1799836, P = 3.28E-15; rs1040399, P = 1.87E-6; 2276T>C or 2327T>C, P = 2.20E-6) and haplotype-based TDT analyses also found distorted transmission. In conclusion, this study provides the strongest evidence for the involvement of MAOB gene in the etiology of ADHD to date, at least in Han Chinese population. (copyright) 2007 Wiley-Liss, Inc.

Hum Mov Sci. 2008;27:310-24.

Increased associated movements: Influence of attention deficits and movement difficulties.

Licari M, Larkin D.

This study was designed to examine whether increased associated movements (AMs) reflect motor difficulties or the symptoms associated with attention disorders. Four groups of male children (N = 51) aged 6-8 years participated: Group 1 consisted of 13 children diagnosed with developmental coordination disorder (DCD); Group 2 consisted of 13 children diagnosed with attention deficit hyperactivity disorder (ADHD); Group 3 consisted of 10 children diagnosed with co-occurring DCD and ADHD, and Group 4 was a control sample of 15 children, with no known movement or attention difficulties. Various AM tasks were selected from established assessments and previous research to measure AM severity. The results supported the hypothesis that increased severity of AMs reflect movement difficulties with children in the DCD and DCD/ADHD groups displaying significantly more AMs than children in the ADHD and control groups ($p < .001$). No differences were found between the ADHD only and control groups ($p = .67$) or the DCD and DCD/ADHD groups ($p = .81$) suggesting that AM severity is not influenced by the neurodevelopmental symptoms associated with ADHD. (copyright) 2008 Elsevier B.V. All rights reserved.

Eur Child Adolesc Psychiatry. 2008;17:133-42.

Switching from methylphenidate immediate release to MPH-SODAS(trademark) in attention-deficit/hyperactivity disorder.

Maia CRM, Matte BC, Ludwig HT, et al.

Objective: To assess ADHD symptoms after switching from Methylphenidate Immediate-release (MPH-IR) to Methylphenidate Spheroidal Oral Drug Absorption System (MPH-SODAS(trademark)) in clinically stable patients with ADHD and to identify predictors of dissatisfaction with MPH-SODAS(trademark). Methods: This is an 8-week open clinical trial. Patients were assigned to MPH-SODAS(trademark) according to their pre-study dose of MPH-IR. Assessments at baseline were conducted using the Swanson, Nolan, and Pelham-IV Questionnaire (SNAP-IV), and the Barkley's Side Effect Rating Scale (SERS). Potential predictors of treatment response were evaluated. Results: From 62 patients, 47 completed the protocol. There was no significant change in the total score at the SNAP-IV ($F(1,51.26) = 0.01$; $P = 0.91$) and its subscales scores during the trial. Although no significant effect on the SERS total score ($F(1,111.49) = 0.75$; $P = 0.39$) was found, one adult patient with a previous cardiovascular condition presented a hemorrhagic cerebral vascular accident resulting in her obit. Overall, 46 (74.2%) patients reported to be satisfied. No factor assessed predicted dissatisfaction in univariate analyses. Conclusion: Results suggested that switching from MPH-IR to MPH-SODAS(trademark) did not affect stabilization of ADHD symptoms in the majority of patients. MPH prescription in patients with previous cardiovascular conditions must be extremely careful. Further studies with long-acting MPH including larger samples and patients not responsive to MPH-IR are needed especially in countries outside the US. (copyright) 2007 Steinkopff Verlag Darmstadt.

J Child Psychol Psychiatry Allied Discip. 2008;49:543-52.

Contrasting deficits on executive functions between ADHD and reading disabled children.

Marzocchi GM, Oosterlaan J, Zuddas A, et al.

Background: The object of this study was to analyze the executive functioning of children with attention deficit hyperactivity disorder (ADHD) or reading disability (RD) independent of their non-executive deficits. Methods: Three carefully diagnosed groups of children, aged between 7 and 12 years (35 ADHD, 22 RD and 30 typically developing children), were tested on a wide range of tasks related to five major domains of executive functioning (EF): inhibition, visual working memory, planning, cognitive flexibility, and verbal fluency. Additional tasks were selected for each domain to control for non-executive processing. Results: ADHD children were impaired on interference control, but not on prepotent and ongoing response suppression. ADHD showed deficits on visual working memory, planning, cognitive flexibility and phonetic fluency. RD children were impaired on phonetic fluency. The only EF measure that differentiated ADHD from RD was planning. Conclusions: The present sample of ADHD children showed several EF deficits, whereas RD children were almost spared executive dysfunction, but exhibited deficits in phonetic fluency. (copyright) 2007 The Authors.

Arch Pediatr Adolesc Med. 2008;162:313-21.

Effect of weight, sleep duration, and comorbid sleep disorders on behavioral outcomes in children with sleep-disordered breathing.

Owens JA, Mehlenbeck R, Lee J, et al.

Objective: To assess the relative contribution of potential risk factors for adverse neurobehavioral outcomes in children referred for evaluation of sleep-disordered breathing (SDB), including weight, mean sleep duration, and comorbid sleep disorders. Design: Medical record review. Setting: Academic pediatric medical center. Participants: Clinical sample of 235 children aged 3 to 18 years undergoing overnight polysomnography for symptoms of SDB. Outcome Measures: History of behavioral, emotional, and academic problems and Child Behavior Checklist (CBCL) scores. Results: More than half (56%) of the sample was overweight or at risk for overweight, more than one-third (36%) was classified as being short sleepers, and almost half (49%) had at least 1 additional sleep diagnosis. Forty-seven percent had a history of behavioral problems and 23% had a reported diagnosis of attention-deficit/hyperactivity disorder. There were no significant differences in CBCL scores based on any measure of SDB disease severity. Increased weight was associated with increased internalizing CBCL scores in a dose-dependent fashion ($P=.003$), while short sleepers were more likely to have elevated externalizing scores ($P<.001$). Overall, the strongest predictor of adverse behavioral outcomes was the presence of at least 1 additional sleep diagnosis ($P<.001$). Conclusions: The relationship between SDB and parent-reported behavioral outcomes in children is complex. In addition to SDB-related impairments, clinicians should consider the relative contributions of being overweight, insufficient sleep, and comorbid sleep disorders when assessing behavior in these children. (copyright)2008 American Medical Association. All rights reserved.

Clin Case Stud. 2008;7:224-37.

Use of stimulus fading and functional assessment to treat pill refusal with an 8-year-old boy diagnosed with ADHD.

Reitman D, Passeri C.

Pharmacological treatments improve functioning for many of the core problems characteristic of attention deficit/hyperactivity disorder (ADHD). Pharmacological treatment is also useful when delivered in combination with behavior management procedures. However, many children find swallowing pills and capsules difficult, and many refuse treatment outright. There are limited resources available to parents confronted with their children's pill refusal behaviors, especially when these difficulties are not because of skills- or anxiety-related problems. This study describes the use of stimulus fading and functional assessment to eliminate pill refusal with an 8-year-old boy diagnosed with ADHD. The study is a replication and extension of procedures described by Anderson, Ruggiero, and Adams to facilitate pill swallowing for a child diagnosed with HIV. Completely independent pill swallowing was achieved after 12 sessions of stimulus fading supplemented by a functional behavioral assessment. Functional assessment suggested that pill refusal behavior was related to positive (attention) and negative (avoidance) reinforcement. (copyright) 2008 Sage Publications.

Biol Psychiatry. 2008;63:935-45.

Association Study of 10 Genes Encoding Neurotrophic Factors and Their Receptors in Adult and Child Attention-Deficit/Hyperactivity Disorder.

Ribases M, Hervas A, Ramos-Quiroga JA, et al.

Background: Attention-deficit/hyperactivity disorder (ADHD) is a common childhood-onset psychiatric disorder that often persists into adolescence and adulthood and is characterized by inappropriate levels of inattention, hyperactivity, and/or impulsivity. Genetic and environmental factors are believed to be involved in the continuity of the disorder as well as in changes in ADHD symptomatology throughout life. Neurotrophic factors (NTFs), which participate in neuronal survival and synaptic efficiency, are strong candidates to contribute to the neuroplasticity changes that take place in the human central nervous system during childhood, adolescence, and early adulthood and might be involved in the genetic predisposition to ADHD. Methods: We performed a population-based association study in 546 ADHD patients (216 adults and 330 children) and 546 gender-matched unrelated control subjects with 183 single nucleotide polymorphisms covering 10 candidate genes that encode four neurotrophins (NGF, BDNF, NTF3, and NTF4/5), a member of

the cytokine family of NTFs (CNTF), and their receptors (NTRK1, NTRK2, NTRK3, NGFR, and CNTFR). Results: The single-marker and haplotype-based analyses provided evidence of association between CNTFR and both adulthood ($p = .0077$, odds ratio [OR] = 1.38) and childhood ADHD ($p = 9.1e-04$, OR = 1.40) and also suggested a childhood-specific contribution of NTF3 ($p = 3.0e-04$, OR = 1.48) and NTRK2 ($p = .0084$, OR = 1.52) to ADHD. Conclusions: Our data suggest that variations in NTFs might be involved in the genetic susceptibility to ADHD, support the contribution of the CNTFR locus as a predisposition factor for the disorder, and suggest that NTF3 and NTRK2 might be involved in the molecular basis of the age-dependent changes in ADHD symptoms throughout life span. (copyright) 2008 Society of Biological Psychiatry.

J Child Psychol Psychiatry Allied Discip. 2008;49:535-42.

Evidence for overlapping genetic influences on autistic and ADHD behaviours in a community twin sample.

Ronald A, Simonoff E, Kuntsi J, et al.

Background: High levels of clinical comorbidity have been reported between autistic spectrum disorders (ASD) and attention deficit hyperactivity disorder (ADHD). This study takes an individual differences approach to determine the degree of phenotypic and aetiological overlap between autistic traits and ADHD behaviours in the general population. Methods: The Twins Early Development Study is a community sample born in England and Wales. Families with twins born in 1994-6 were invited to join; 6,771 families participated in the study when the twins were 8 years old. Parents completed the Childhood Asperger Syndrome Test and the Conners' DSM-IV subscales. Teacher data were also collected on a sub-sample. High scores on the Conners' subscales were used to identify possible ADHD cases. Potential ASD cases were interviewed using the Development and Well-Being Assessment. Multivariate structural equation model-fitting was employed, as well as DeFries Fulker extremes analysis and liability threshold model-fitting. Results: Significant correlations were found between autistic and ADHD traits in the general population (.54 for parent data, .51 for teacher data). In the bivariate models, all genetic correlations were $>.50$, indicating a moderate degree of overlap in genetic influences on autistic and ADHD traits, both throughout the general population and at the quantitative extreme. This phenotypic and genetic overlap still held when sex, IQ and conduct problems were controlled for, for both parent and teacher data. There was also substantial overlap in suspected cases (41% of children who met criteria for an ASD had suspected ADHD; 22% with suspected ADHD met criteria for an ASD). Conclusions: These results suggest there are some common genetic influences operating across autistic traits and ADHD behaviours throughout normal variation and at the extreme. This is relevant for molecular genetic research, as well as for psychiatrists and psychologists, who may have assumed these two sets of behaviours are independent. (copyright) 2008 The Authors.

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Heterogeneity in the pharmacodynamics of two long-acting methylphenidate formulations for children with attention deficit/hyperactivity disorder: A growth mixture modelling analysis.

Sonuga-Barke EJS, Van Lier P, Swanson JM, et al.

Objectives: To use growth mixture modelling (GMM) to identify subgroups of children with attention deficit hyperactive disorder (ADHD) who have different pharmacodynamic profiles in response to extended release methylphenidate as assessed in a laboratory classroom setting. Methods: GMM analysis was performed on data from the COMACS study (Comparison of Methylphenidates in the Analog Classroom Setting): a large ($n = 184$) placebo-controlled cross-over study comparing three treatment conditions in the Laboratory School Protocol (with a 1.5-h cycle of attention and deportment assessments). Two orally administered, once-daily methylphenidate (MPH) bioequivalent formulations [Metadate CD(trademark)/Equasym(trademark) XL (MCD-EQXL) and Concerta XL (CON)] were compared with placebo (PLA). Results: Three classes of children with distinct severity profiles in the PLA condition were identified. For both MCD-EQXL and CON, the more severe their PLA symptoms the better, the children's response. However, the formulations produced different growth curves by class, with CON having essentially a flat profile for all three classes (i.e. no effect of PLA severity) and MCD-EQXL showing a marked decline in symptoms immediately post-dosing in the two most severe classes compared with the least severe. Comparison of daily doses matched for

immediate-release (IR) components accounted for this difference. Conclusion: The results suggest considerable heterogeneity in the pharmacodynamics of MPH response by children with ADHD. When treatment response for near-equal, bioequivalent daily doses the two formulations was compared, marked differences were seen for children in the most severe classes with a strong curvilinear trajectory for MCD-EQXL related to the greater IR component. (copyright) 2007 Steinkopff Verlag.

Am J Med Genet Part B Neuropsychiatr Genet. 2008;147:316-19.

Intelligence in DSM-IV combined type attention-deficit/hyperactivity disorder is not predicted by either dopamine receptor/transporter genes or other previously identified risk alleles for attention-deficit/hyperactivity disorder.

Sonuga-Barke EJS, Brookes KJ, Buitelaar J, et al.

A major goal of genetic studies of attention deficit hyperactivity disorder (ADHD) is to identify individual characteristics that might help segregate the disorder's inherent heterogeneity. [Mill et al. (2006); Arch Ger Psychiatry 63:462-469] recently reported a potentially important association between two dopamine-related risk polymorphisms (DRD4 variable number tandem repeat (VNTR) in exon 3 and DAT1 VNTR in the 3' UTR) and lowered IQ in ADHD. The objective of the current study was to replicate the [Mill et al. (2006); Arch Ger Psychiatry 63:462-469] findings in a clinical sample and to extend the analysis to a large range of alternative SNP markers of putative ADHD risk alleles identified in a recent study [Brookes et al. (2006); Mol Genet 11:934-953]. Participants were 1081 children and adolescents with a research-confirmed combined type ADHD diagnosis and 1300 unaffected siblings who took part in the International Multi-centre ADHD Genetics (IMAGE) project. They were recruited from multiple settings from across Europe: Belgium, Britain, Germany, Ireland, Israel, Netherlands, Spain and Switzerland. The results were that ADHD was associated with reduced IQ. However, there was no association between the two dopamine-related risk polymorphisms and IQ in either the probands or their siblings. Furthermore, other selected genetic markers previously demonstrated to be associated with ADHD in this sample were not associated with IQ. This large scale study with a clinically ascertained and rigorously diagnosed sample failed to replicate the association between genetic polymorphisms in the dopamine system and IQ in ADHD. We also observed no association of other SNPs with IQ in ADHD. (copyright) 2007 Wiley-Liss, Inc.

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Sleep problems in children with attention-deficit/hyperactivity disorder: prevalence and the effect on the child and family.

Sung V, Hiscock H, Sciberras E, et al.

OBJECTIVES: To determine the prevalence of sleep problems in children with attention-deficit/hyperactivity disorder (ADHD) and their associations with child quality of life (QOL), daily functioning, and school attendance; caregiver mental health and work attendance; and family functioning. DESIGN: Cross-sectional survey. SETTING: Pediatric hospital outpatient clinic, private pediatricians' offices, and ADHD support groups in Victoria, Australia. PARTICIPANTS: Schoolchildren with ADHD. Main Exposure Attention-deficit/hyperactivity disorder. OUTCOME MEASURES: Primary measure was caregivers' reports of their children's sleep problems (none, mild, or moderate or severe). Secondary outcomes were (1) child QOL (Pediatric Quality of Life Inventory), daily functioning (Daily Parent Rating of Evening and Morning Behavior scale), and school attendance, (2) caregiver mental health (Depression Anxiety Stress Scale) and work attendance, and (3) family functioning (Child Health Questionnaire subscales). Caregivers also reported on how their pediatrician treated their children's sleep problems. RESULTS: Two hundred thirty-nine of 330 (74%) eligible families completed the survey. Child sleep problems were common (mild, 28.5%; moderate or severe, 44.8%). Moderate or severe sleep problems were associated with poorer child psychosocial QOL, child daily functioning, caregiver mental health, and family functioning. After adjusting for confounders, all associations held except for family impacts. Compared with children without sleep problems, those with sleep problems were more likely to miss or be late for school, and their caregivers were more likely to be late to work. Forty-five percent of caregivers reported that their pediatricians had asked about their children's

sleep and, of these, 60% reported receiving treatment advice. CONCLUSIONS: Sleep problems in children with ADHD are common and associated with poorer child, caregiver, and family outcomes. Future research needs to determine whether management of sleep problems can reduce adverse outcomes.

J Child Adolesc Psychopharmacol. 2008;18:179-84.

An open-label trial of reboxetine in children and adolescents with attention-deficit/hyperactivity disorder.

Tehrani-Doost M, Moallemi S, Shahrivar Z.

Objective: The main aim of this study was to assess the effectiveness and tolerability of reboxetine, a selective norepinephrine reuptake inhibitor, in children and adolescents with attention-deficit/hyperactivity disorder (ADHD). Method: Twenty children and adolescents, aged 6-16 (mean, 10.29; standard deviation, SD = 2.72) years, diagnosed with ADHD were enrolled in a 6-week open-label trial. Assessments included the ADHD Rating Scale (home version) and Conners' Parent Rating Scale-Revised, Short Version [CPRS-R (S)]. The dose of reboxetine was between 3 and 6 mg/day (mean, 4.41). Results: A significant reduction in ADHD symptoms, as measured by CPRS-R (S), was observed. This reduction was significant after 2 weeks of treatment ($p < 0.001$). The oppositional symptoms were also reduced significantly ($p < 0.05$). Reboxetine was relatively well tolerated. The most common adverse effects were decreased appetite, constipation, sleep problems, and dry mouth. Conclusion: This open-label study suggests the efficacy of reboxetine in the treatment of ADHD in children and adolescents. Controlled studies in larger samples are needed to test the effectiveness of reboxetine in ADHD. (copyright) 2008 Mary Ann Liebert, Inc.

Clin Psychol Rev. 2008;28:783-800.

Efficacy of methylphenidate, psychosocial treatments and their combination in school-aged children with ADHD: A meta-analysis.

Van der Oord S, Prins PJM, Oosterlaan J, et al.

Introduction: This meta-analysis compares effect-sizes of methylphenidate and psychosocial treatments and their combination on ADHD, concurrent oppositional, conduct symptoms, social behaviors and academic functioning. Method: Several databases (PubMed, PsycInfo, ISI Web of Science) were searched for articles published between 1985 and September 2006. Inclusion criteria were: a diagnosis of ADHD; age from 6-12 years; a randomized controlled treatment design; efficacy established with parent and teacher rating scales; psychosocial treatments used were described as behavioral or cognitive-behavioral; the methylphenidate treatment was short-acting; and finally, treatment was conducted in a clinical setting. Results: ADHD outcomes showed large mean weighted effect-sizes for both methylphenidate and combined treatments, psychosocial treatments had a moderate mean weighted effect-size; a similar pattern emerged for oppositional and conducted behavior symptoms. Social behavior outcomes showed comparable moderate mean weighted effect-sizes for all treatments, while on academic functioning, all treatments had low mean weighted effect-sizes. There was no correlation between duration of psychosocial treatment and effect-size. Conclusions: Both methylphenidate and psychosocial treatments are effective in reducing ADHD symptoms. However, psychosocial treatment yields smaller effects than both other treatment conditions. Psychosocial treatment has no additional value to methylphenidate for the reduction of ADHD and teacher rated ODD symptoms. However, for social behavior and parent rated ODD the three treatments were equally effective. For improvement of academic functioning no treatment was effective. (copyright) 2007 Elsevier Ltd. All rights reserved.

Chin J Med Imaging Technol. 2008;24:489-92.

Correlated study between reaction time and fractional anisotropy for ADHD children.

Wang L, Fan GG, Yu B, et al.

Objective: To investigate whether there are correlations between reaction time (RT) performance and fractional anisotropy (FA) values of projection, communication and association white matter (WM) for attention-deficit/hyperactivity disorder (ADHD) children, and whether these correlations are different from those of normal controls, to explore the neural foundation for the changes of ADHD children's RT. Methods:

Sixteen ADHD children and 16 sex-, age-, handedness-, extent of education-matched normal controls underwent DTI scanning. Behavioral performance (mean correct reaction time, mRT) was recorded when they performed a Categorical N-Back Working Memory Task. Statistics analysis was done respectively for mRT and mFA between two groups. Results: Compared with controls, ADHD children had much longer mRT (controls: [626.92(plus or minus)41.28] ms; ADHD group: [700.45(plus or minus)66.98] ms; $P < 0.01$) and lower mFA in right pericallosal frontal WM ($P < 0.01$) and bilateral cingulum bundle WM (respectively $P < 0.05$). The significantly negative correlations were shown between mRT and mFA in right cingulum bundle WM and bilateral middle cerebellar peduncle for ADHD children while in right pericallosal frontal WM and bilateral anterior limb of internal capsule for controls. Conclusion: When performing working memory task, there are different neural networks for ADHD children from controls, The changes of microstructures of WM might mediate the alterations of behavioral RT.

J Clin Psychol. 2008;64:402-21.

Early childhood temperament in pediatric bipolar disorder and attention deficit hyperactivity disorder.

West AE, Schenkel LS, Pavuluri MN.

Recent theories suggest that children with pediatric bipolar disorder (PBD) may exhibit more difficult temperaments premorbidly, including traits such as behavioral disinhibition and difficulty with emotion regulation. We investigated temperament characteristics retrospectively during infancy and toddlerhood in subjects with PBD ($n = 25$), attention-deficit/hyperactivity disorder (ADHD; $n = 25$), and healthy controls ($n = 25$). Children with PBD were reported to experience increased difficult temperament in both infancy and toddlerhood compared to children with ADHD. Several characteristics of difficult temperament were associated with residual symptoms of mania and depression. Difficult premonitory temperament characteristics may be a specific indicator of a bipolar diathesis, or might signal underlying dysfunction in affective processes that significantly increase risk for a mood disorder. (copyright) 2008 Wiley Periodicals, Inc.

Biol Psychiatry. 2008;63:917-26.

Misinterpreting Emotional Expressions in Attention-Deficit/Hyperactivity Disorder: Evidence for a Neural Marker and Stimulant Effects.

Williams LM, Hermens DF, Palmer D, et al.

Background: In addition to cognitive impairment, there are disruptions to mood and emotion processing in attention-deficit/hyperactivity disorder (ADHD) but little is known about their neural basis. We examined ADHD disturbances in mood and emotion recognition and underlying neural systems before and after treatment with stimulant medication. Methods: Participants were 51 unmedicated ADHD adolescents and 51 matched healthy control subjects rated for depressed and anxious mood and accuracy for identifying facial expressions of basic emotion. Brain function was recorded using event-related potentials (ERPs) while subjects viewed these expressions. ADHD subjects were retested after 4 weeks, following treatment with methylphenidate (MPH). Results: ADHD subjects showed a profile of emotion-related impairment: higher depression and anxiety, deficits in identifying threat-related emotional expressions in particular, and alterations in ERPs. There was a pronounced reduction in occipital activity during the early perceptual analysis of emotional expression (within 120 msec), followed by an exaggeration of activity associated with structural encoding (120-220 msec) and subsequent reduction and slowing of temporal brain activity subserving context processing (300-400 msec). Methylphenidate normalized neural activity and produced some improvement of emotion recognition but had no impact on negative mood. Improvements in neural activity with MPH were consistent predictors of improvement in clinical features of emotional lability and hyperactivity. Conclusions: Objective behavioral and brain function measures of emotion processing may provide a valuable addition to the clinical armamentarium for assessing emotional disturbances in ADHD and the efficacy of stimulants for treating these disturbances. (copyright) 2008 Society of Biological Psychiatry.

Arch Clin Neuropsychol. 2008;23:283-93.

Prediction of ADHD in boys and girls using the D-KEFS.

Wodka EL, Loftis C, Mostofsky SH, et al.

To examine patterns of executive dysfunction associated with ADHD, 123 children (54 ADHD, 69 controls) of ages 8-16 years were administered selected subtests from the Delis-Kaplan Executive Function System (D-KEFS). Children with ADHD performed significantly worse than controls on measures of both basic (less executive demand) skills and those with more executive demand from the Color-Word Interference and Tower subtests; however, no group differences were noted on any of the D-KEFS contrast scores. Most subtype comparisons yielded no differences; however, children with the Combined subtype outperformed children with the Inattentive subtype on measures of both basic and executive skills from the Trail Making Test. Children with ADHD demonstrate executive dysfunction that is identified by D-KEFS summary, but not contrast scores. In this carefully screened sample of children with ADHD, few significant differences were found between groups suggesting limited sensitivity or specificity of the D-KEFS for classifying children with ADHD. (copyright) 2007 National Academy of Neuropsychology.

Behav Genet. 2008;38:266-76.

High heritability for a composite index of children's activity level measures.

Wood AC, Rijdsdijk F, Saudino KJ, et al.

Despite the high heritability of children's activity level, which forms part of the core symptom domain of hyperactivity-impulsivity within attention deficit hyperactivity disorder (ADHD), there has only been a limited success with identifying candidate genes involved in its etiology. This may reflect a lack of understanding about the different measures used to define activity level across studies. We aimed to study the genetic and environmental etiology across three measures of activity level: parent and teacher ratings of hyperactivity-impulsivity and actigraph measurements, within a population-based sample of 463 7-9 year old twin pairs. We further examined ways in which the three measures could be combined for future molecular studies. Phenotypic correlations across measures were modest, but a common underlying phenotypic factor was highly heritable (92%); as was a simple aggregation of all three measurements (77%). This suggests that distilling what is common to all three measures may be a good method for generating a quantitative trait suitable for molecular studies of activity level in children. The high heritabilities found are encouraging in this respect. (copyright) 2008 Springer Science+Business Media, LLC

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