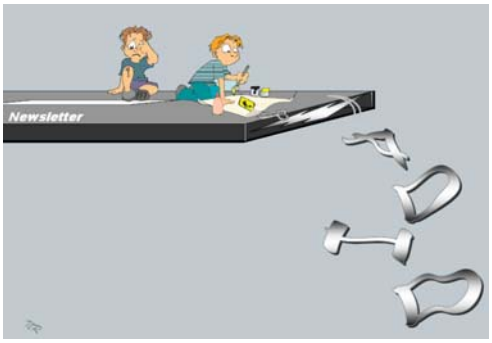

ADHD
ATTENTION DEFICIT HYPERACTIVITY DISORDER

Laboratorio per la Salute Materno Infantile

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Child Psychiatry Hum Dev. 2009;40:353-66.

The diagnostic utility of behavioral checklists in identifying children with ADHD and children with working memory deficits.

Alloway TP, Gathercole SE, Holmes J, et al.

The present study investigated whether children with ADHD and those with working memory impairments have a common behavioral profile in the classroom. Three teacher checklists were used: the Conners' teacher rating scale (CTRS), the behavior rating inventory of executive function (BRIEF), and the working memory rating scale. The Conners' continuous performance test (CPT) was also included to determine whether there is a correspondence between performance on this widely used cognitive measure of attention deficits and teacher ratings of classroom behavior. All three behavior scales, but not the CPT, were able to successfully discriminate children with ADHD and those with working memory deficits from typically-developing children. Both the CTRS and the BRIEF discriminated a significant proportion of the children with ADHD from those with working memory deficits, indicating that while both groups exhibit behavioral problems in the classroom, they are characterized by differential attention profiles. The children with ADHD were identified on the basis of oppositional and hyperactive behavior, while those with working memory deficits were more inattentive.

Eur J Hum Genet. 2009;17:958-66.

Suggestive linkage of ADHD to chromosome 18q22 in a young genetically isolated Dutch population.

Amin N, Aulchenko YS, Dekker MC, et al.

Attention deficit/hyperactivity disorder (ADHD) is a common, highly heritable, neuropsychiatric disorder among children. Linkage studies in isolated populations have proved powerful to detect variants for complex diseases, such as ADHD. We performed a genome-wide linkage scan for ADHD in nine patients from a genetically isolated population in the Netherlands, who were linked to each other within 10 generations through multiple lines of descent. The genome-wide scan was performed with a set of 400 microsatellite markers with an average spacing of (plus or minus) 10-12cM. We performed multipoint parametric linkage analyses using both recessive and dominant models. Our genome scan pointed to several chromosomal regions that may harbour ADHD susceptibility genes. None exceeded the empirical genome-wide significance threshold, but the Log of odds (LOD) scores were > 1.5 for regions 6p22 (Heterogenetic log of odds (HLOD) = 1.67) and 18q21 - 22 (HLOD = 2.13) under a recessive model. We followed up these two regions in a larger sample of ADHD patients (n = 21, 9 initial and 12 extra patients). The LOD scores did not increase after increasing the sample size (6p22 (HLOD = 1.51), 18q21 - 22 (HLOD = 1.83)). However, the LOD score on 6p22 increased to 2 when a separate analysis was performed for the inattentive type ADHD children. The linkage region on chromosome 18q overlaps with the findings of association of rs2311120 (P = 10-5) and rs4149601 (P = 10-4) in the genome-wide association analysis for ADHD performed by the Genetic Association Information Network consortium. Furthermore, there was an excess of regions harbouring serotonin receptors (HTR1B, HTR1E, HTR4, HTR1D, and HTR6) that showed a LOD score > 1 in our genome-wide scan.

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.

Prog Neurol Psychiatry. 2009;13:18-20.
Use of atomoxetine in children and adolescents with ADHD.
Banerjee S.
Atomoxetine is a non-stimulant drug licensed for use in the treatment of attention deficit-hyperactivity disorder (ADHD).Dr Banerjee describes a study that was carried out over a two-year period in the three ADHD clinics in East Kent Hospitals NHS Trust to evaluate the current practice on the use of atomoxetine in ADHD in children and adolescents.

Pediatrics. 2009;124:71-78.
Do stimulants protect against psychiatric disorders in youth with ADHD? A 10-year follow-up study.
Biederman J, Monuteaux MC, Spencer T, et al.
OBJECTIVE: Little is known about the effect of stimulant treatment in youth with attention-deficit/hyperactivity disorder (ADHD) on the subsequent development of comorbid psychiatric disorders. We tested the association between stimulant treatment and the subsequent development of psychiatric comorbidity in a longitudinal sample of patients with ADHD.
METHODS: We conducted a case-control, 10-year prospective follow-up study into young-adult years of youth with ADHD. At baseline, we assessed consecutively referred white male children with (n = 140) and without (n = 120) ADHD, aged 6 to 18 years. At the 10-year follow-up, 112 (80%) and 105 (88%) of the children in the ADHD and control groups, respectively, were reassessed (mean age: 22 years). We examined the association between stimulant treatment in childhood and adolescence and subsequent comorbid disorders and grade retention by using proportional hazards survival models.
RESULTS: Of the 112 participants with ADHD, 82 (73%) were previously treated with stimulants. Participants with ADHD who were treated with stimulants were significantly less likely to subsequently develop depressive and anxiety disorders and disruptive behavior and less likely to repeat a grade compared with participants with ADHD who were not treated.
CONCLUSIONS: We found evidence that stimulant treatment decreases the risk for subsequent comorbid psychiatric disorders and academic failure in youth with ADHD.

J Clin Psychiatry. 2009;70:732-40.
The child behavior checklist-pediatric bipolar disorder profile predicts a subsequent diagnosis of bipolar disorder and associated impairments in ADHD youth growing up: A longitudinal analysis.
Biederman J, Petty CR, Monuteaux MC, et al.
Objective: To examine the predictive utility of the Child Behavior Checklist-Pediatric Bipolar Disorder (CBCL-PBD) profile to help identify children at risk for bipolar disorder.
Method: Subjects were ascertained from 2 identically designed longitudinal case-control family studies of subjects (males and females aged 6-18 years) with DSM-III-R attentiondeficit/ hyperactivity disorder (ADHD). Based on data from the baseline assessment, ADHD subjects without a lifetime diagnosis of bipolar disorder were stratified by the presence (CBCL-PBD positive, N = 28) or absence (CBCL-PBD negative, N = 176) of a CBCL-PBD score (greater-than or equal to) 210 (total of attention, aggression, and anxious/depressed subscales). Subjects were comprehensively assessed at follow-up with structured psychiatric interviews. Data were collected from April 1988 to February 2003.
Results: Over a mean follow-up period of 7.4 years, a positive CBCL-PBD score predicted subsequent diagnoses of bipolar disorder, major depressive disorder, and conduct disorder, as well as impaired psychosocial functioning and higher risk for psychiatric hospitalization.
Conclusions: This work suggests that a positive CBCL-PBD score based on elevations on the attention problems, aggressive behavior, and anxious/depressed subscales predicts subsequent pediatric bipolar disorder and associated syndrome-congruent impairments. If confirmed in other studies, the CBCL-PBD score has the potential to help identify children at high risk to develop bipolar disorder.

J Dev Behav Pediatr. 2008;29:501-07.

The longitudinal course of comorbid oppositional defiant disorder in girls with attention-deficit/hyperactivity disorder: Findings from a controlled 5-year prospective longitudinal follow-up study.

Biederman J, Petty CR, Monuteaux MC, et al.

OBJECTIVE: A better understanding of the long-term scope and impact of the comorbidity with oppositional defiant disorder (ODD) in girls with attention-deficit/hyperactivity disorder (ADHD) has important clinical and public health implications. However, most of the available information on the subject derives from predominantly male samples. This study evaluated the longitudinal course and impact of comorbid ODD in a large sample of girls with ADHD.

METHODS: Subjects were pediatrically and psychiatrically referred girls with and without ADHD assessed blindly at baseline (mean age = 11.6 years), and 5 years later (mean age = 16.6 years) by mid to late adolescence. The subjects' diagnostic status of ADHD with and without comorbid ODD at baseline was used to define three groups (controls [N = 107], ADHD [N = 77], ADHD + ODD [N = 37]). Outcomes were examined using logistic regression (for binary outcomes) and linear regression (for continuous outcomes).

RESULTS: Compared with girls who had ADHD only, those with ADHD + ODD at baseline had a significantly increased risk for ODD and major depression at follow-up. Both groups of girls with ADHD had an increased risk for conduct disorder and bipolar disorder at follow-up.

CONCLUSIONS: These longitudinal findings in girls with ADHD support and extend previously reported findings in boys indicating that ODD heralds a compromised outcome for girls with ADHD in adolescence.

Postgrad Med. 2008;120:69-88.

Onset of efficacy of long-acting psychostimulants in pediatric attention-deficit/hyperactivity disorder.

Brams M, Mao AR, Doyle RL.

Background: Attention-deficit/hyperactivity disorder (ADHD) adversely impacls the educational achievement, mood and emotion processing, and interpersonal relationships of children and adolescents. Effective treatments include a number extended-release (ER) methylphenidate- (MPH) and amphetamine-based drugs. Some formulations release a comparatively larger bolus after dosing and can result in different onset and duration of efficacy.

Objective: Provide an evidence-based description of the time course of efficacy of psychostimulant medications used in ADHD treatment of children and adolescents.

Data Sources: A literature search from 1998 to 2008 was conducted using a MEDLINE database and the keywords "attention-deficit/hyperactivity disorder," "extended-release," "sustained-release," "methylphenidate," "amphetamine," "randomized," "controlled," "placebo," "efficacy," "time course," and "classroom study."

Data Extraction: Selection criteria included randomized, blinded, placebo- or active comparator-controlled clinical studies that evaluated an ER formulation of a psychostimulant treatment for ADHD in at least 30 children and adolescents aged 6 to 17 years.

Study Selection: Eighteen clinical trials met the chosen criteria and evaluated: d, l-MPH, long-acting (d, l-MPH-LA); d, l-MPH-OR; d, l-MPH-CD (MCD); d-MPH-ER; MPH transdermal system (MTS); mixed amphetamine salts, ER (MAS-XR); and lisdexamfetamine dimesylate (LDX).

Data Synthesis: Onset of efficacy was earliest for d-MPH-ER at 0.5 hours, followed by d, l-MPH-LA at 1 to 2 hours, MCD at 1.5 hours, d, l-MPH-OR at 1 to 2 hours, MAS-XR at 1.5 to 2 hours, MTS at 2 hours, and LDX at approximately 2 hours.

Duration of efficacy for each treatment was: MCD 7.5 hours; d, l-MPH-LA 8 to 12 hours; and 12 hours for MTS, d-MPH-ER, d, l-MPH-OR, MAS-XR, and LDX. However, data should be interpreted with caution given the different trial designs and assessment time points.

Conclusions: d-MPH-ER has the earliest onset of efficacy at 0.5 hours postdose, and MTS, d-MPH-ER, d, l-MPH-OR, MAS-XR, and LDX have a long duration of action at 12 hours postdose. Clinicians should consider differences in the onset of efficacy of each drug in the context of individual patient needs.

Clin Child Psychol Psychiatry. 2009;14:329-44.
Social functioning difficulties in ADHD: Association with PDD risk.
Carpenter Rich E, Loo SK, Yang M, et al.
Although social difficulties are a common feature of Attention-Deficit Hyperactivity Disorder (ADHD), little is known about the diversity of social problems, their etiology, or their relationship to disorders of social behavior, such as autism or Pervasive Developmental Disorder (PDD). In 379 children and adolescents with ADHD, social functioning was assessed using the Child Behavior Checklist (Achenbach, 1991). Factor analysis and structural equation modeling revealed two factors that we labeled Peer Rejection and Social Immaturity. A factor reflecting 'PDD risk' was defined from eight items of a separate screening instrument for PDD and examined for its association with these two social factors. There was a significant association with both factors, but the association was much stronger for the Social Immaturity (Standardized Beta [2] =.51) than Peer Rejection (2 =.29) factors. Social Immaturity was also associated with a greater number of hyperactive symptoms while high Peer Rejection was associated with increased aggression and lower IQ in the ADHD children.

Ann Pharmacother. 2009;43:1084-95.
An update on central nervous system stimulant formulations in children and adolescents with attention-deficit/hyperactivity disorder.
Chavez B, Sopko J, Ehret MJ, et al.
OBJECTIVE: To review recent literature on the different stimulant preparations regarding efficacy and safety in children and adolescents with attention-deficit/hyperactivity disorder (ADHD) and describe advantages and disadvantages of the many available dosage formulations.
DATA SOURCES: Literature retrieval was performed through PubMed/MEDLINE (2005-December 2008) using the terms methylphenidate, amphetamines, central nervous system stimulants, and attention-deficit/hyperactivity disorder. In addition, reference citations from publications identified were reviewed and drug manufacturers were contacted for any possible additional references.
STUDY SELECTION AND DATA EXTRACTION: Double-blind clinical trials found using the search criteria listed above were included for review. Open-label studies and studies prior to 2005 were included if no double-blind trials were published for that formulation within the time period reviewed.
DATA SYNTHESIS: The literature reviewed here demonstrates the efficacy and safety of stimulant medications in children and adolescents with ADHD. However, there are 19 different formulations of stimulants, leading to confusion and errors in prescribing and dispensing of these drugs. Knowing and understanding the advantages and disadvantages of the different formulations can lead to individualized treatment. Formulations like Concerta, Focalin-XR, Adderall-XR, and Vyvanse provide the convenience of once-daily dosing. Each of these provides varying amount of stimulants at different times of the day. Vyvanse has a unique delivery system that may lower the risk of patients abusing their medication. Daytrana gives patients more control over their dosing by being able to choose when the patch is removed; it is also a feasible alternative for children who cannot swallow pills. For patients who cannot swallow tablets or capsules, the capsules of Focalin-XR, Adderall-XR, Metadate-CD, and Ritalin-LA can be opened and sprinkled on applesauce.
CONCLUSIONS: Stimulants are effective medications to treat the symptoms of ADHD. The multiple available dosage forms allow for individualization of treatment.

Pediatrics. 2009;124:226-33.
Side effects of methylphenidate in childhood cancer survivors: A randomized placebo-controlled trial.
Conklin HM, Lawford J, Jasper BW, et al.
OBJECTIVES: To investigate the frequency and severity of side effects of methylphenidate among childhood survivors of acute lymphoblastic leukemia and brain tumors and identify predictors of higher adverse effect levels.
METHODS: Childhood cancer survivors (N = 103) identified as having attention and learning problems completed a randomized, double-blind, 3-week, home-crossover trial of placebo, low-dose methylphenidate (0.3 mg/kg; 10 mg twice daily maximum) and moderate-dose methylphenidate (0.6 mg/kg; 20 mg twice daily maximum). Caregivers completed the Barkley Side Effects Rating Scale (SERS) at baseline and each week during the medication trial. Siblings of cancer survivors (N = 49) were recruited as a healthy comparison group.
RESULTS: There was a significantly higher number and severity of symptoms endorsed on the SERS when patients were taking moderate dose compared with placebo or low dose, but not low dose compared with placebo. The number of side effects endorsed on the SERS was significantly lower during all 3 home-

crossover weeks (placebo, low dose, moderate dose) when compared with baseline symptom scores. The severity of side effects was also significantly lower, compared with baseline screening, during placebo and low-dose weeks but not moderate-dose weeks. Both the number and severity of symptoms endorsed at baseline were significantly higher for patients compared with siblings. Female gender and lower IQ were associated with higher adverse effect levels.
CONCLUSIONS: Methylphenidate is generally well tolerated by childhood cancer survivors. There is a subgroup at increased risk for side effects that may need to be closely monitored or prescribed a lower medication dose. The seemingly paradoxical findings of increased "side effects" at baseline must be considered when monitoring side effects and designing clinical trials.

Pediatrics. 2009;124:358-64.
Improved outcomes associated with medical home implementation in pediatric primary care .
Cooley WC, McAllister JW, Sherrieb K, et al.
OBJECTIVE: The medical home model with its emphasis on planned care, care coordination, family-centered approaches, and quality provides an attractive concept construct for primary care redesign. Studies of medical home components have shown increased quality and reduced costs, but the medical home model as a whole has not been studied systematically. This study tested the hypothesis that increased medical homeness in primary care practice is associated with decreased utilization of health services and increased patient satisfaction.
METHODS: Forty-three primary care practices were identified through 7 health plans in 5 states. Using the Medical Home Index (MHI), each practice's implementation of medical home concepts "medical homeness" was measured. Health plans provided the previous year's utilization data for children with 6 chronic conditions. The plans identified 42 children in each practice with these chronic conditions and surveyed their families regarding satisfaction with care and burden of illness.
RESULTS: Higher MHI scores and higher subdomain scores for organizational capacity, care coordination, and chronic-condition management were associated with significantly fewer hospitalizations. Higher chronic-condition management scores were associated with lower emergency department use. Family survey data yielded no recognizable trends with respect to the medical home measurement.
CONCLUSIONS: Developing an evidence base for the value of the primary care medical home has importance for providers, payers, policy makers, and consumers. Reducing hospitalizations through enhanced primary care provides a potential case for new reimbursement strategies supporting medical home services such as care coordination. Larger-scale studies are needed to further develop/examine these relationships.

Res Autism Spectr Disord. 2009;3:329-35.
Attention and communication in Rett Syndrome.
Fabio RA, Antonietti A, Castelli I, et al.
The study of selective attention and its influence on communication in patients with Rett Syndrome (RS), in which communication abilities are impaired is particularly relevant. The aim of this study was to analyse attention and communication abilities in RS. A sample of 20 children (10 girls with RS and 10 control girls, matched on mental age) were tested on both attention and non-verbal communication abilities. Results showed that girls with RS have specific deficits in the ability to attend selectively to the relevant sources of information, and that they pay attention to irrelevant stimuli. Results related to non-verbal communication partially show specific impairment in girls with RS. Educational implications are discussed.

Neurol Psychiatry Brain Res. 2008;15:185-90.
Methylphenidate use in children with ADHD: The effect of parental and teacher ratings on clinician's treatment choice.
Gurkan K, Kilic BG, Bilgic A, et al.
Introduction: Information related to symptoms of attention deficit hyperactivity disorder (ADHD) is frequently obtained through parent and teacher reports. Likelihood of diagnostic accuracy may increase when multiple informants are used, but it is not clear how these reports affect clinicians' treatment choices. In this study, it was aimed to investigate the frequency of drugs that were used in management of ADHD and, to determine the effects of parental and teacher ratings on methylphenidate (MPH) use in a sample of clinically referred Turkish children.

Methods: Data related to 279 children with ADHD, were ages of 6-18, who referred to a Child and Adolescent Psychiatry Department of a university hospital were evaluated retrospectively. ADHD diagnoses were made according to DSM-IV-TR by clinical interviews with the help of the teacher and parent rating scales. Parents and teachers completed the Conners Rating Scales. The sample was splitted up into two groups as cases who were prescribed MPH by clinicians and cases who were not. Sociodemographic data and baseline ratings of CPRS and CTRS were compared between the groups. Chi Square, t-test, and logistic regression were used for statistical analysis.
Results: Medication was used in 96.4% (n=269) of the patients, which is mostly consisted of MPH (92.2 %, n=248). Age, gender, educational level of parents, existence of neurological disorder or EEG abnormality was found not to be associated with MPH use. Comparing the subscale scores of the CPRS and CTRS, only the conduct problem score and the total score of CTRS differed between the two groups ($p < 0.05$). Conduct problems subscale scores of CTRS was found to be predictor of MPH use ($p = 0.001$, OR = 1.4).
Conclusions: Methylphenidate is the most frequently used medication in children with ADHD in this sample. Results suggested that teacher ratings may have an impact on treatment choice of the clinicians and also highlighted the importance of multi-informant assessment in children with ADHD.

Emot Behav Difficulties. 2009;14:49-68.
The relationship between divorce and the psychological well-being of children with ADHD: Differences in age, gender, and subtype.
Heckel L, Clarke A, Barry R, et al.
It is generally accepted that Attention-Deficit/Hyperactivity Disorder (ADHD) results from a dysfunction of the central nervous system, which has led to a commonly held belief that environmental factors play little role in the behavioural problems of children identified as having ADHD. Therefore, the two studies reported in this article investigated the relationship between parental divorce and the psychological well-being of children with ADHD. Subjects, aged 6 to 18 years, were diagnosed with either the inattentive or combined subtype of the disorder. Firstly, differences in children's behaviour between divorced and non-divorced families were examined, and subtype, age, and gender differences were evaluated in terms of symptom severity and comorbid conditions. Secondly, parents' perceptions of the impact of their children's behaviour on marital status and family/parental functioning were examined. Parental divorce was associated with greater symptom severity, more externalizing/internalizing behaviours, and poorer social functioning, but less with academic underachievement. Further, parental divorce was related to adjustment differences in ADHD subtypes, age, and gender. However, the correlation between behaviour problems of children with ADHD and marital/family dysfunction was weak. It may be concluded that parental divorce was associated with the psychological well-being in children with ADHD, and there is some suggestion that ADHD should be viewed as a bio-psychosocial disorder.

Disabil Health J. 2009;2:15-19.
Measurement of time processing ability and daily time management in children with disabilities.
Janeslatt G, Granlund M, Kottorp A.
Background: Improvement is needed in methods for planning and evaluating interventions designed to facilitate daily time management for children with intellectual disability, Asperger syndrome, or other developmental disorders.
Objectives: The aim of this study was to empirically investigate the hypothesized relation between children's time processing ability (TPA), daily time management, and self-rated autonomy. Such a relationship between daily time management and TPA may support the idea that TPA is important for daily time management and that children with difficulties in TPA might benefit from intervention aimed at improving daily time management.
Methods: Participants were children aged 6 to 11 years with dysfunctions such as attention-deficit/hyperactivity disorder, autism, or physical or intellectual disabilities (N = 118). TPA was measured with the instrument KaTid. All data were transformed to interval measures using applications of Rasch models and then further analysed with correlation and regression analysis.
Results: The results demonstrate a moderate significant relation between the parents' ratings of daily time management and TPA of the children, and between the self-rating of autonomy and TPA. There was also a significant relation between self-ratings of autonomy and the parents' rating of the children's daily time management. Parents' ratings of their children's daily time management explain 25% of the variation in TPA, age of the children explains 22%, while the child's self-rating of autonomy can explain 9% of the variation in TPA. The three variables together explain 38% of the variation in TPA. The results indicate the viability of the

instrument for assessing TPA also in children with disabilities and that the ability measured by KaTid is relevant for daily time management.
Conclusions: TPA seems to be a factor for children's daily time management that needs to be taken into consideration when planning and evaluating interventions designed to facilitate everyday functioning for children with cognitive impairments. The findings add to the increasing knowledge base about children with time processing difficulties and contribute to better methods aimed at improving these children's daily time management. Further research is needed to examine if there are differences in TPA related to specific diagnosis or other child characteristics.

Hum Psychopharmacol. 2009;24:95-102.
Neurocognitive effects of switching from methylphenidate-IR to OROS-methylphenidate in children with ADHD.
Kim YK, Shin MS, Kim JW, et al.
Objectives: This study evaluated neurocognitive changes after switching from immediate release forms of methylphenidate (MPH-IR) to osmotic release oral system methylphenidate (OROS-MPH).
Methods: 102 children with attention-deficit/hyperactivity disorder (ADHD) participated in an open label, 28 day trial, performing neurocognitive test at baseline and at 28 days after the switch from MPH-IR to OROS-MPH.
Results: There were significant improvements in the commission error and the reaction time of both visual and auditory continuous performance tests (CPTs) at 28 days after switching from MPH-IR to OROS-MPH. A positive correlation was observed between the improvement in parent/ caregiver-rated IOWA Conners total score ((Delta) IOWA) and the reduction in commission error (r = 0.3, p = 0.001) and reduction in reaction time variability (r = 0.3, p = 0.006) of visual CPT. In a linear regression model, the change in parent/caregiver-rated IOWA Conners scale total scores were significant predictors of change in commission error ((beta) = 0.3, p = 0.005, CI = 0.4-2.3, adjusted R2 = 0. 12) and RT variability ((beta) = 0.3, p = 0.004, CI = 0.5-2.4, adjusted R2 = 0. 09) of visual CPT.
Conclusions: These data suggest that MPH-IR may be successfully switched to OROS-MPH treatment with associated improvements in neurocognitive performance. Large-scale controlled trials are needed to replicate these findings.

Behav Brain Funct. 2009;5.
Hyperresponsiveness to social rewards in children and adolescents with attention-deficit/hyperactivity disorder (ADHD).
Kohls G, Herpertz-Dahlmann B, Konrad K.
Background: Current research suggests that attention-deficit/ hyperactivity disorder (ADHD) is associated with larger behavioral sensitivity to reinforcement contingencies. However, most studies have focused thus far on the enhancing effects of tangible rewards such as money, neglecting that social-emotional stimuli may also impact task performance in ADHD patients.
Methods: To determine whether non-social (monetary) and social (positive facial expressions) rewards differentially improve response inhibition accuracy in children and adolescents with ADHD, we applied an incentive go/no-go task with reward contingencies for successful inhibition and compared ADHD subjects with typically developing individuals.
Results: Both social and monetary contingencies improved inhibition accuracy in all participants. However, individuals with ADHD displayed a particularly higher profit from social reward than healthy controls, suggesting that cognitive control in ADHD patients can be specifically improved by social reinforcement. By contrast, self-rated motivation associated with task performance was significantly lower in ADHD patients.
Conclusion: Our findings provide evidence for hyperresponsiveness to social rewards in ADHD patients, which is accompanied by limited self-awareness. These data suggest that social reward procedures may be particularly useful in behavioral interventions in children with ADHD.

Infant Behav Dev. 2009;32:173-82.
Parenting of 7-month-old infants at familial risk for ADHD during infant's free play, with restrictions on interaction.
Landau R, Amiel-Laviad R, Berger A, et al.
Patterns of interaction of 34 mothers and fathers with their 7-month-old boys at familial risk for ADHD and 25 comparison families were studied during infant play with blocks. The parents were instructed to refrain from

intervening as much as possible. Infants in the risk group did not differ from those in the comparison group in frequency of needing help or involving parents in play. Nonetheless, they received adequate responsivity from their mothers less often than infants in the comparison group. Mothers in the risk group were also more likely not to respond to these needs at all. Mothers in the comparison group were more physically intrusive. No group difference was found for maternal rebuilding of the infant's play. No group differences were found for any of father's behaviors. However, fathers in both groups rebuilt their infant's play more frequently than mothers, infants looked at them more often, and a larger number of infants involved the father in their play.

Postgrad Med. 2008;120:89-102.

Effect of lisdexamfetamine dimesylate on parent-rated measures in children aged 6 to 12 years with attention-deficit/hyperactivity disorder: A secondary analysis.

Lopez FA, Ginsberg LD, Arnold V.

Objective: To evaluate the efficacy of lisdexamfetamine dimesylate (LDX) in school-aged children with attention-deficit/hyperactivity disorder (ADHD), using the Connors' Parent Rating Scale, Revised Short Version (CPRS-R:S) and its subscales.
Methods: This was a secondary post hoc analysis of data from a placebo-controlled, double-blind, parallel-group, forced dose-escalation trial. Boys and girls aged 6 to 12 years with a primary diagnosis of ADHD were randomly assigned to LDX (30, 50, or 70 mg/d) or placebo, improvement on the CPRS-R:S and its subscales (ADHD Index, hyperactivity, oppositional, and cognition) at 10:00 AM, 2:00 PM, and 6:00 PM was analyzed. Safety assessments included the identification of adverse events and were conducted throughout the study.
Results: Of the 290 patients randomized, 285 were included in the intent-to-treat population. Parents noted significant improvements at all 3 assessment times on the CPRS-R:S total score and for the CPRS-R:S ADHD Index, hyperactivity, and cognition subscales, regardless of the subject baseline disease severity. For the CPRS-R:S oppositional subscale, significant improvement was noted at 10:00 AM and 2:00 PM ($P < 0.01$), and overall, significant improvement occurred in subjects who were more severely ill at baseline. The tolerability of LDX was comparable to that of other stimulants.
Conclusion: Once-daily treatment with LDX was associated with significant improvement in parent-rated assessments of ADHD-related behavior throughout the day at approximately 10:00 AM, 2:00 PM, and 6:00 PM. Lisdexamfetamine dimesylate was effective and well tolerated in this study population of children aged 6 to 12 years with ADHD.

Psychol Med. 2009;39:149-55.

Alcohol and illicit drug dependence among parents: Associations with offspring externalizing disorders.

Marmorstein NR, Iacono WG, McGue M .

Background: Previous research indicates that alcohol and drug dependence constitute aspects of a general vulnerability to externalizing disorders that accounts for much of the parent-offspring resemblance for these and related disorders. This study examined how adolescent offspring risk for externalizing psychopathology varies with respect to parental alcoholism and illicit drug dependence.
Method: Data from the Minnesota Twin Family Study, a community-based investigation of adolescents (age 17 years, n=1252) and their parents, were used. Lifetime diagnoses of alcohol and drug dependence (among both parents and offspring) and offspring attention deficit hyperactivity disorder, oppositional defiant disorder, conduct disorder, adult antisocial behavior, and nicotine dependence were assessed via structured interviews.
Results: Parental alcohol dependence and parental drug dependence were similarly associated with increased risk for nearly all offspring disorders, with offspring of alcohol and drug-dependent parents having approximately 2-3 times the odds for developing a disorder by late adolescence compared to low-risk offspring. Compared to parental dependence on other illicit drugs, parental cannabis dependence was associated with weaker increased risk for offspring externalizing disorders.
Conclusions: Both parental alcohol and drug dependence are independently associated with an increased risk for a broad range of externalizing psychopathology among late-adolescent offspring.

J Dev Behav Pediatr. 2008;29:483-92.
The impact of experience on children's understanding of ADHD.
McMenamy JM, Perrin EC.
OBJECTIVE: This study examined how 7 to 8-year-old and 11 to 12-year-old children with and without attention-deficit hyperactivity disorder (ADHD) interpreted the causes and treatment of ADHD and colds. We also examined the complexity of children's explanations of medications for ADHD and colds.
METHODS: A semi-structured interview was used to assess children's understanding of ADHD and colds. Interviews were coded separately for each of 3 categories: principles (e.g., biological or psychological) used to explain cause and treatment; ideas about the intentionality of symptoms; and articulation of mechanisms underlying the action of medications.
RESULTS: Younger children without ADHD demonstrated a belief that children with ADHD have control over and choose to exhibit their symptoms. Younger children with ADHD used nonintentional psychology (e.g., learning or early childhood experiences) or biological principles in their responses whereas older children with ADHD combined both of these categories in their accounts of ADHD. Older children without ADHD favored purely biological explanations of ADHD. Both age and experience were related to the complexity of children's responses to questions about the action of medications for ADHD and colds.
DISCUSSION: Findings highlight the need for educational interventions to rework the notion that children with ADHD intentionally display their symptoms. Educational interventions should clearly be tailored to children's developmental level as well as their experience with a condition.

Postgrad Med. 2008;120:60-68.
Special issues in the diagnosis and treatment of ADHD in adolescents.
Steinhoff KW.
Attention-deficit/hyperactivity disorder (ADHD) is a common disorder among adolescents but can be a challenge to diagnose in this population for several reasons. Obvious symptoms of hyperactivity and impulsivity are displayed less frequently than in younger children. Direct observation by potential raters is more limited because adolescents spend less time with parents and usually have multiple teachers throughout the day. Also, adolescents often suffer from psychiatric comorbidities, which affect the presentation of ADHD and can confound the diagnosis. Similarly, impaired social skills and academic performance may result from this disorder or for other reasons. These difficulties underscore the importance of a careful and comprehensive assessment that includes parent-, teacher-, und self-reported measures of functioning in several environments, including school, home, and work. Because ADHD is chronic and usually impairing in several domains (eg, social skills, academic performance, family relations, emotional health, driving), adequate treatment is essential. However, there are relatively few treatment studies in adolescents. Stimulant agents are well established as first-line medication treatment for both school-aged children and adults. Existing data support that this is also the case with adolescents. Specifically, both an extended-release formulation of methylphenidate, osmotic-release oral system (OROS(registered trademark) MPH; CONCERTA(registered trademark)) and a mixed amphetamine salts extended-release (MAS XR; Adderall(registered trademark) XR) have demonstrated efficacy and safety in reducing the core symptoms of ADHD in well-designed, multisite, placebo-controlled, double-blind trials. Additional research is needed to further refine diagnostic and assessment tools in the adolescent population.

Behav Brain Funct. 2009;5.
The motor function neurological assessment (MFNU) as an indicator of motor function problems in boys with ADHD.
Stray LL, Stray T, Iversen S, et al.
Background: The paper presents the Motor Function Neurological Assessment (MFNU), as a tool for identifying typical motor function problems in children with Attention Deficit Hyperactivity Disorder (ADHD). The study investigated motor functions in boys diagnosed with Hyperkinetic Disorder (HKD, F.90.0). HKD corresponds to the ADHD-combined (ADHD-C) diagnosis in the DSM-IV. The paper addresses the ability of the instrument to discriminate between non-medicated boys with HKD and a control group consisting of normal non-referred boys without any clinical significant ADHD symptoms.
Methods: 25 drug-naive boys, aged 8-12 years and recently diagnosed as HKD F90.0, were compared with 27 controls, all boys in the same age range, on 17 MFNU subtests, and with a 'Total score' parameter.
Results: On the individual subtests 80-96% (median 88%) of the ADHD group showed 'moderate' to 'severe' problems, compared to 0-44% (median 14.8%) within the control group. The percentage of 'severe problems' ranged from 44-84%, (median 64%) in the ADHD group, and 0-44% (median 0%) in the control group. The

highly significant differences found between the groups on all subtests, and on the Total score scores, indicated that the MFNU had a high discriminative power when children with ADHD and normal controls were compared. The Total score parameter seemed to be a meaningful discriminator of a common underlying factor of the 17 subtests used in the study.
Conclusion: The study confirms our clinical findings that the MFNU measures a consistent pattern of motor function problems in children with HKD, and that these problems are rarely represented in individuals without ADHD. Further research is needed to investigate to what extent the MFNU taps motor problems that are truly specific to ADHD, in contrast to motor problems common to children with DCD or other clinical problems.

J Clin Psychiatry. 2009;70:756-64.
Aripiprazole in children and adolescents with bipolar disorder comorbid with attention-deficit/hyperactivity disorder: A pilot randomized clinical trial.
Tramontina S, Zeni CP, Ketzer CR, et al.
Objective: To assess response to treatment with aripiprazole in children and adolescents with bipolar disorder comorbid with attention-deficit/ hyperactivity disorder (ADHD).
Method: Children and adolescents were extensively assessed according to DSM-IV criteria for bipolar disorder comorbid with ADHD (n = 710). Those with this comorbidity who were acutely manic or in mixed states were randomly assigned in a 6-week double-blind, placebo-controlled trial to aripiprazole (n = 18) or placebo (n = 25). Primary outcome measures were assessed weekly and included the Young Mania Rating Scale; the Swanson, Nolan, and Pelham Scale-Version IV; and weight. Secondary outcome measures were the Clinical Global Impressions-Severity of Illness scale, the Child Mania Rating Scale-Parental Version (CMRS-P), the Children's Depression Rating Scale-Revised, the Kutcher Adolescent Depression Scale, and adverse events. The trial was conducted at the Hospital de Clinicas de Porto Alegre, Rio Grande do Sul, Brazil, from January 2005 to November 2007.
Results: The group receiving aripiprazole showed a significantly greater reduction in YMRS scores (P = .02, effect size [ES] = 0.80), CMRS-P scores (P = .02; ES = 0.54), and CGI-S scores (P = .04; ES = 0.28) from baseline to endpoint than the placebo group. In addition, higher rates of response (P = .02) and remission (P = .01) were found for the aripiprazole group. No significant between-group differences were found in weight, ADHD symptoms, and depressive symptoms. Adverse events significantly more frequent in the aripiprazole group were somnolence and sialorrhea.
Conclusions: Aripiprazole was effective in reducing manic symptoms and improving global functioning without promoting severe adverse events or weight gain. No significant treatment effect in ADHD symptoms was observed. Studies are needed to assess psychopharmacologic interventions for improving ADHD symptoms in juvenile bipolar disorder comorbid with ADHD. Trial Registration: clinicaltrials.gov Identifier: NCT00116259.

Emot Behav Difficulties. 2009;14:69-84.
Variability of ADHD symptoms across primary school contexts: An indepth case study.
Wheeler L, Pumfrey P, Wakefield P.
By focusing on the findings from one case study, this article demonstrates a replicable individualised approach to identifying variability of ADHD symptoms across contexts at given times in a main phase and follow-up phase (situational variability) and across both phases (temporal variability) in a primary school setting. Currently we have found no studies that focus on both situational and temporal variability in the same curricular contexts. A mixed-method approach combines quantitative and qualitative research strategies. Two classroom observation schedules incorporating the DSM-IV diagnostic criteria for ADHD have been used over a two-year period to gather unique quantitative data on the variability of ADHD symptoms. Other data-gathering techniques include the use of field notes and interviews. Identification is made of contextual and curricular settings and approaches which may reduce ADHD behaviours. Such indicators may help teachers to enhance on-task behaviour in pupils with ADHD. Discussion focuses on: the delivery and organisation of the curriculum; teaching and learning styles; and grouping and support in the mainstream classroom.

Pediatrics. 2009;124:e75-e80.

Cardiac Safety of Methylphenidate Versus Amphetamine Salts in the Treatment of ADHD.

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

OBJECTIVES: Safety concerns about central nervous system stimulants for the treatment of attention-deficit/hyperactivity disorder (ADHD) include adverse cardiac effects. This study aimed to compare the risk for cardiac events in users of methylphenidate and amphetamine salts.

METHODS: A retrospective cohort design using claims data from the Florida Medicaid fee-for-service program representing a total of 2 131 953 children and adolescents was used. The analysis included all beneficiaries who were between 3 and 20 years of age, enrolled between July 1994 and June 2004, had at least 1 physician diagnosis of ADHD and were newly started on methylphenidate or amphetamine salts. Each month of follow-up was classified according to stimulant use into current use or former use.Wedefined cardiac events as first emergency department (ED) visit for cardiac disease or symptoms. Risk between current users of methylphenidate versus amphetamine salts and former users of drugs in these categories was compared by using a time-dependent Cox proportional hazard model that adjusted for differences in gender; race; age; year of the index date; disability; congenital anomalies; history of circulatory disease; history of hospital admission; and use of antidepressants, antipsychotics, and bronchodilators.

RESULTS: A total of 456 youth visited the ED for cardiac reasons during 52 783 years of follow-up. After adjustment for differences in covariates, the risk for cardiac ED visits was similar among current users of methylphenidate or amphetamines. Periods of former use had a similar risk between youth with an exposure history to methylphenidate or amphetamine.

CONCLUSION: Exposure to methylphenidate and amphetamines salts showed similar risk for cardiac ED visits. Additional population-based studies that address manifestation of serious heart disease, especially after long-term use, dosage comparisons, and interactions with preexisting cardiac risk factors are needed to inform psychiatric treatment decisions.

Hum Psychopharmacol. 2009;24:87-94.

Diminished central nervous 5-T neurotransmission and mood self-ratings in children and adolescents with ADHD: No clear effect of rapid tryptophan depletion.

Zepf FD, Holtmann M, Stadler C, et al.

Introduction: Research on 5-HT-functioning in adult patients and healthy subjects using rapid tryptophan depletion (RTD) has indicated weak but stable effects on mood ratings. Altered mood in children and adolescents with attention-deficit/hyperactivity disorder (ADHD) can confound the differential diagnosis between severe ADHD and mood disorders such as pediatric bipolar disorder. The present study investigated the effects of RTD induced lowered central nervous 5-HT-levels on mood self-ratings in children with ADHD.

Methods: Seventeen boys with ADHD participated in the study in a double-blind within-subject crossover-design. They were administered RTD within an amino acid drink lacking tryptophan, thus lowering central nervous 5-HT-synthesis. On another day they received a placebo. Self-rated mood was assessed on both days at baseline conditions and at three different post-drink time-points.

Results: RTD had no clear effect on mood within the whole sample. Low scorers on venturesomeness were more strongly affected by RTD in terms of feelings of inactivity and negative feelings compared to high venture patients.

Conclusions: Our data did not show a significant effect of RTD on mood self-ratings. However, the findings must be considered as preliminary and require further replication, in particular as they could be due to sampling bias.

Neurosci Lett. 2009;460:11-15.

The brain regulation mechanism of error monitoring in impulsive children with ADHD-An analysis of error related potentials.

Zhang JS, Wang Y, Cai RG, et al.

The objective of this study was to investigate the brain mechanism involved in the regulation of impulsivity in children with Attention Deficit and Hyperactivity Disorder (ADHD) through error detection as well as error monitoring. The subjects in this study included 7-11-year-old impulsive ADHD children as well as normal children and adult controls. Error related negativity (ERN) and error positivity (Pe) were measured. ERN peak latency from the children groups was delayed significantly when compared with the adult group; however, no significant difference in ERN amplitude was found among the three groups. Impulsive ADHD children had the earliest peak latency of Pe. In addition, the average Pe amplitude in impulsive children was

significantly smaller than in adults (Cz and Pz), and smaller than in normal children (Pz). Late conscious cognitive processing of error is significantly weaker in impulsive ADHD children, suggesting a serious deficit of late error monitoring, rather than error detection.

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