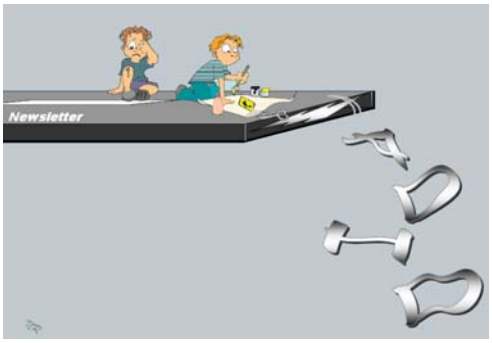

ADHD
ATTENTION DEFICIT HYPERACTIVITY DISORDER

Laboratorio per la Salute Materno Infantile

MARIO NEGRI
ISTITUTO DI RICERCHE FARMACOLOGICHE

NEWSLETTER **N. 14 - anno II - Febbraio 2009**

J Am Acad Child Adolesc Psychiatry. 2008;47:817-25.
Temporal stability of ADHD in the high-IQ population: Results from the MGH longitudinal family studies of ADHD.
Antshel KM, Faraone SV, Maglione K, et al.
Objective: The diagnosis of attention-deficit/hyperactivity disorder (ADHD) in high-IQ youths remains controversial.
Method: To further explore the diagnostic validity of ADHD in this population, we studied two cohorts of high-IQ youths, both with and without ADHD, across a 4.5-year period.
Results: Compared to those without ADHD, high-IQ youths with ADHD had significantly higher rates of mood, anxiety, and disruptive behavior disorders at follow-up. In addition, ADHD status was a significant predictor for higher impairments across most social, academic, and family functional domains. Associations between baseline and follow-up IQ scores did not differ between groups. Syndromal persistence rates of ADHD were similar between high-IQ and average-IQ youths with ADHD.
Conclusions: These results provide further support for the predictive validity of ADHD in high-IQ youths.

Journal of Applied Developmental Psychology. 2008 Sep;29:403-11.
Metamemory development in preschool children with ADHD.
Antshel KM, Nastasi R.
An aspect of metacognition, metamemory (knowledge and awareness of one's memory) was investigated across time in preschool children with ADHD (n = 31) and a sample of age, sex, socioeconomic and IQ-matched typically developing children (n = 31). Only children with stable ADHD diagnoses were included. Participants were assessed on a variety of cognitive and parent report measures. Longitudinal results indicated that the preschool children with ADHD and typically developing children had similar intellectual capacities. In addition, at age 4, children with ADHD and typically developing children had comparable metamemory skills. Nevertheless, one year later, when control participants made strong gains in metamemory development, children with ADHD began to lag behind. It is therefore crucial that metamemory difficulties in children with ADHD are detected as soon as they appear so that they can be fully assessed and remediation programs put in place in the school and home.

Eur Child Adolesc Psychiatry. 2009;18:53-59.
Reboxetine versus methylphenidate in treatment of children and adolescents with attention deficit-hyperactivity disorder.
Arabgol F, Panaghi L, Hebrani P.
Background and purpose: Attention deficit-hyperactivity disorder (ADHD) is a common psychiatric diagnosis among children and adolescents. This study has been conducted to evaluate the efficacy and tolerability of reboxetine in comparison with methylphenidate in treatment of children and adolescents with ADHD.
Methods: Thirty three children, 7-16 years of age, diagnosed with ADHD, participated in a 6-week, double-blind clinical trial with reboxetine (4-6 mg/d) and methylphenidate (20-50 mg/d) in two divided doses. The principal measure of the outcome was the Teacher and Parent ADHD Rating Scale. Patients were assessed by a child psychiatrist at baseline, 14, 28, and 42 days after the start of medication.

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.

Results: No significant differences were observed between the two protocols on the Parent (P = 0.26) and Teacher (P = 0.97) ADHD Rating Scale scores and in treatment dropouts. A significant improvement in ADHD symptoms was observed over the 6 weeks of treatment for Parent ADHD Rating Scale (P < 0.001) and Teacher ADHD Rating Scale score in both groups (P < 0.001). The most common adverse effects reported with reboxetine were drowsiness and anorexia with mild to moderate severity.
Conclusions: The study revealed that reboxetine may be beneficial in treatment of ADHD. Further studies are required to clarify the potential therapeutic effects on comorbid depression and anxiety and adverse effect profile.

Int J Immunopathol Pharmacol. 2008;21:1049-51.
Holly's story: Illustration of an attention deficit hyperactivity disorder case.
Aureli A, Piancatelli D, del Beato T, et al.
During the last 10 years a significant increase of childhood neuropsychiatric disorders, such as attention deficit hyperactivity disorder (ADHD), has been reported. ADHD is believed to have a multifactorial etiology including multiple genetic and prenatal environmental factors. For this reason, there has been a recent revival regarding the role of autoimmunity in this pathology. An ADRD combined-type patient born from a drug-addicted mother was studied. Neuropsychological tests according to the criteria of the 4th edition of the Diagnostic and Statistical Manual (DSM4) permitted us to make the ADHD-diagnosis. The HLA-A, -B, and -DRB1 alleles of the child were determined by sequence-based typing (SBT) after DNA extraction. Although no autistic behavioral features were observed in the patient, a double genetic association between ADHD and autism was reported. In fact, HLA class I alleles (A*02 and B*44) associated to autism and the HLA class II allele (DRB1*04) associated both to autism and ADHD were identified.

Int J Immunopathol Pharmacol. 2008;21:985-91.
Investigation on the possible relationship existing between the HLA-DR gene and attention deficit hyperactivity disorder and/or mental retardation.
Aureli A, Sebastiani P, del Beato T, et al.
This study examines the possible relationship existing between the HLA-DR gene and attention deficit hyperactivity disorder (ADHD) and/or mental retardation (MR). The diagnosis of ADHD and mental retardation were established through clinical interviews with the parents, children and teachers, according to the criteria in DSM-IV. HLA-DRB1 genotyping was performed both by polymerase chain reaction-sequence specific primers (PCR-SSP) and by sequence based typing (SBT) in a cohort of 81 affected children and a sample of 100 healthy controls. Here, we report a positive association of HLA-DR4 with ADHD but not with MR. The study adds confirmation to the role of the HLA-DRB1 in the etiology of some types of childhood neuropsychiatric illnesses.

J Am Acad Child Adolesc Psychiatry. 2008;47:879-89.
Longitudinal mental health service and medication use for ADHD among Puerto Rican youth in two contexts.
Bird HR, Shrout PE, Duarte CS, et al.
Objective: The study describes prevalence and rates of services and medication use and associated factors over time among Puerto Rican youths with attention-deficit/hyperactivity disorder (ADHD).
Method: Longitudinal data are obtained on Puerto Rican children ages 5 through 13 years in the south Bronx in New York (n = 1,138) and two metropolitan areas in Puerto Rico (n = 1,353). The Diagnostic Interview Schedule for Children-IV is the diagnostic tool.
Five composite measures of risk factors: negative family influences, ineffective structuring, environmental risks, child risks, and maternal acceptance are constructed to relate services and medication use to risk variables.
Results: ADHD prevalence is similar in Puerto Rico and the south Bronx. Overall mental health services, medication, and psychostimulant use is lower in Puerto Rico across three time points. Most participants never received treatment at any time point. More environmental risks, negative child traits, and low maternal warmth are associated with more services, even after adjusting for comorbidity. When risk variables are controlled, the effects of ADHD on services use decrease. Previous treatment is a strong predictor of subsequent treatment.

Conclusions: Rates of services and medication use are lower in Puerto Rico. Context seems to be more important than ethnicity in predicting mental health services and medication use among Puerto Rican children with ADHD. Other psychiatric diagnoses and general risk variables are important correlates of services and medication use.

Journal of Attention Disorders. 2008 Sep;12:126-34.

ADHD with comorbid oppositional defiant disorder or conduct disorder: Discrete or nondistinct disruptive behavior disorders?

Connor DF, Doerfler LA.

Objective: In children with ADHD who have comorbid disruptive behavior diagnoses distinctions between oppositional defiant disorder (ODD) and conduct disorder (CD) remain unclear. The authors investigate differences between ODD and CD in a large clinical sample of children with ADHD.
Method: Consecutively referred and systematically assessed male children and adolescents with either ADHD (n = 65), ADHD with ODD (n = 85), or ADHD with CD (n = 50) were compared using structured diagnostic interviews and parent, teacher, and clinician rating scales.
Results: In children with ADHD, significant differences emerged between ODD and CD in the domains of delinquency, overt aggression, and ADHD symptom severity; ADHD with CD was most severe, followed by ADHD with ODD, and ADHD had the least severe symptoms. Distinctions between ADHD with CD and the other two groups were found for parenting, treatment history, and school variables.
Conclusion: Within the limits of a cross-sectional methodology, results support clinically meaningful distinctions between ODD and CD in children with ADHD.

J Child Adolesc Psychopharmacol. 2008;18:257-64.

Does pharmacotherapy for attention-deficit/hyperactivity disorder predict risk of later major depression?

Daviss WB, Birmaher B, Diler RS, et al.

Objective: This study's goal was to determine among youths with attention-deficit/hyperactivity disorder (ADHD) how the history of ADHD pharmacotherapy influenced the risk of developing major depressive disorder (MDD), compared to other commonly reported predictors.
Method: Diagnostic and treatment history data were analyzed retrospectively in 75 youths 11-18 years old with definite or probable ADHD, enrolled in an observational study at a tertiary mental health clinic. Subjects with histories of MDD (H/o MDD) (n = 36) were compared to others who had never been depressed (Never-Depressed) (n = 39) regarding histories of ADHD pharmacotherapy, psychopathology and other potential covariates of MDD risk.
Results: H/o MDD subjects reported longer delays before initiating ADHD pharmacotherapy, were more often female, reported having experienced more traumatic event types, and had higher rates of early anxiety and externalizing disorders. With all covariates allowed to enter a backward stepwise Cox regression of survival time till first episodes of MDD, only two variables remained in the model. The time-dependent variable, ADHD pharmacotherapy, prolonged survival times (p = .012), while having experienced more traumatic event types shortened them (p = .001).
Conclusions: This study provides preliminary evidence that pharmacotherapy for ADHD may have a protective effect in ADHD youths, reducing the risk of later MDD.

Psychopharmacology. 2009;202:531-39.

Methylphenidate improves response inhibition but not reflection-impulsivity in children with attention deficit hyperactivity disorder (ADHD).

Devito EE, Blackwell AD, Clark L, et al.

Rationale: Impulsivity is a cardinal feature of attention deficit hyperactivity disorder (ADHD), which is thought to underlie many of the cognitive and behavioural symptoms associated with the disorder. Impairments on some measures of impulsivity have been shown to be responsive to pharmacotherapy. However, impulsivity is a multi-factorial construct and the degree to which different forms of impulsivity contribute to impairments in ADHD or respond to pharmacological treatments remains unclear.
Objectives: The aims of the study were to assess the effects of methylphenidate (MPH) on the performance of children with ADHD on measures of reflection-impulsivity and response inhibition and to compare with the performance of healthy volunteers.

Methods: Twenty-one boys (aged 7-13 years) diagnosed with ADHD underwent a double-blind, placebo-controlled trial of MPH (0.5 mg/kg) during which they performed the Information Sampling Task (IST) and the Stop Signal Task. A healthy age- and education-matched control group was tested on the same measures without medication.
Results: Children with ADHD were impaired on measures of response inhibition, but did not demonstrate reflection-impulsivity on the IST. However, despite sampling a similar amount of information as their peers, the ADHD group made more poor decisions. MPH improved performance on measures of response inhibition and variability of response, but did not affect measures of reflection-impulsivity or quality of decision-making.
Conclusions: MPH differentially affected two forms of impulsivity in children with ADHD and failed to ameliorate their poor decision-making on the information sampling test

---

Eur Child Adolesc Psychiatry. 2008 Dec;17 Suppl 1:59-70.
How often do children meet ICD-10/DSM-IV criteria of attention deficit-/hyperactivity disorder and hyperkinetic disorder? Parent-based prevalence rates in a national sample--results of the BELLA study.
Dopfner M, Breuer D, Wille N, et al.
BACKGROUND: There is a lack of representative prevalence rates for attention deficit-/hyperactivity disorder (ADHD) according to DSM-IV criteria and hyperkinetic disorder (HD) according to ICD-10 criteria for German subjects.
OBJECTIVE: To report the results of analyses of categorical data on the prevalence rates of the symptoms of ADHD/HD and additional diagnostic criteria, as well as of the diagnoses of ADHD and HD according to symptoms and other diagnostic criteria, according to the ICD-10 and DSM-IV. Further, to report administrative prevalence rates of the diagnosis and rates of co-existing behavioural and emotional problems.
METHOD: Within the BELLA module of the German Health Interview and Examination Survey for Children and Adolescents (KiGGS), a representative sample of parents of 2,452 children and adolescents aged 7-17 years completed an ADHD symptom checklist (FBB-HKS/ADHS) and additional questionnaires for the assessment of coexisting behavioural and emotional problems.
RESULTS: The prevalence rates for the diagnoses of ADHD according to DSM-IV criteria were 5.0% and the rate for HD according to ICD-10 criteria was 1.0%. Higher prevalence rates were found in boys and in younger children. The addition of other diagnostic criteria (impairment, pervasiveness, onset, duration) resulted in a significant decrease of the prevalence rates of ADHD and HD to 2.2 and 0.6%, respectively. Higher prevalence rates were found in families of lower socioeconomic status and families from urban areas. The lifetime administrative prevalence rate was 6.5%. Children with ADHD had an increased risk for coexisting behavioural and emotional problems, especially for aggressive and antisocial behaviour problems, but also for anxiety and mood problems.
CONCLUSION: The results of the national sample are in line with community studies in other countries. The effects of the additional diagnostic criteria of impairment, situational pervasiveness, symptom onset and symptom duration on the prevalence rates have to be considered in other epidemiological studies.

Journal of Applied Behavior Analysis. 2008 Sep;41:429-34.
A preliminary analysis of instructional control in the maintenance of appropriate behavior.
Falcomata TS, Northup JA, Dutt A, et al.
This bridge study evaluated the effects of contingency-specifying instructions (CSIs) and incomplete instructions (IIs) in terms of establishing instructional control of appropriate behavior. Results suggested that instructional control and maintenance were achieved with CSIs but not with IIs. Results are discussed in terms of the potential use of instructional control in the maintenance of appropriate behavior for children with attention deficit hyperactivity disorder.

Journal of the American Academy of Child & Adolescent Psychiatry. 2008 Sep;47:994-1009.
Effect of stimulants on height and weight: A review of the literature.
Faraone SV, Biederman J, Morley CP, et al.
Objective: Stimulant medications are effective treatments for attention-deficit/hyperactivity disorder, but concerns remain about their effects on growth.
Method: We provide a quantitative analysis of longitudinal studies about deficits in expected growth among children with attention-deficit/hyperactivity disorder treated with stimulant medication. Study selection criteria

were use of DSM criteria or clear operational definitions for hyperactivity or minimal brain dysfunction; outcome measures including raw, standardized, or percentile measurement of change in height and/or weight; first assessment of effects on growth occurred during childhood; and follow-up for at least 1 year. For issues not suitable for quantitative analyses, we provide a systematic, qualitative review.
Results: The quantitative analyses showed that treatment with stimulant medication led to statistically significant delays in height and weight. This review found statistically significant evidence of attenuation of these deficits over time. The qualitative review suggested that growth deficits may be dose dependent, deficits may not differ between methylphenidate and amphetamine, treatment cessation may lead to normalization of growth, and further research should assess the idea that attention-deficit/hyperactivity disorder itself may be associated with dysregulated growth.
Conclusions: Treatment with stimulants in childhood modestly reduced expected height and weight. Although these effects attenuate over time and some data suggest that ultimate adult growth parameters are not affected, more work is needed to clarify the effects of continuous treatment from childhood to adulthood. Although physicians should monitor height, deficits in height and weight do not appear to be a clinical concern for most children treated with stimulants.

Neurosci Lett. 2009;451:257-60.
Genetic interaction analysis for DRD4 and DAT1 genes in a group of Mexican ADHD patients.
Gabriela ML, John DG, Magdalena BV, et al.
Attention-deficit hyperactivity disorder (ADHD) is a clinically complex and multifactorial psychiatric disorder of inattention, hyperactivity and impulsivity. Family, twin and adoption studies suggest a genetic influence in the etiology of ADHD. Two variable number of tandem repeats (VNTR) polymorphic systems have been frequently associated with this disorder: the 7 repeat (R) allele in exon 3 of the dopamine receptor D4 (DRD4) and the 10R allele located in the 3' untranslated region (UTR) of the dopamine transporter (DAT1). We conducted a case-control association study between ADHD and these polymorphisms in a group of adolescent inhabitants of the metropolitan area of Mexico City. In addition, we evaluated the interaction between these genes, the disorder and its associated psychiatric comorbidities. No positive association between ADHD and the 7R allele of DRD4 or the 10R allele of DAT1 was observed; however, compared to controls, patients with internalized comorbidities had a lesser frequency of genotypes with the 7R allele of DRD4 and the 10/10 genotype of DAT1. A logistic regression analysis showed that the simultaneous absence of the 10/10 DAT1 and 7/7 DRD4 genotypes predicts membership to the group of ADHD patients with internalized comorbidities (e.g. anxiety, depression). Our results highlight the importance of cross-ethnic research and the possibility of a distinct genetic basis that underlies the type of comorbidities associated with ADHD. This result should be considered in terms of the study design, and further replication is necessary in an independent sample.

J Abnorm Psychol. 2009 Feb;118:203-13.
Neurological correlates of reward responding in adolescents with and without externalizing behavior disorders.
Gatzke-Kopp LM, Beauchaine TP, Shannon KE, et al.
Opposing theories of striatal hyper- and hypodopaminergic functioning have been suggested in the pathophysiology of externalizing behavior disorders. To test these competing theories, the authors used functional MRI to evaluate neural activity during a simple reward task in 12- to 16-year-old boys with attention-deficit/hyperactivity disorder and/or conduct disorder (n = 19) and in controls with no psychiatric condition (n = 11). The task proceeded in blocks during which participants received either (a) monetary incentives for correct responses or (b) no rewards for correct responses. Controls exhibited striatal activation only during reward, shifting to anterior cingulate activation during nonreward. In contrast, externalizing adolescents exhibited striatal activation during both reward and nonreward. Externalizing psychopathology appears to be characterized by deficits in processing the omission of predicted reward, which may render behaviors that are acquired through environmental contingencies difficult to extinguish when those contingencies change.

J Am Acad Child Adolesc Psychiatry. 2008;47:841-42.
Resources for global mental health: Too little for too long.
Gault LM.

Journal of Attention Disorders. 2008 Sep;12:149-55.
Comorbidity of psychiatric disorders and parental psychiatric disorders in a sample of Iranian children with ADHD.
Ghanizadeh A, Mohammadi MR, Moini R.
Objective: To study the psychiatric comorbidity of a clinical sample of children with ADHD and the psychiatric disorders in their parents.
Method: Structured psychiatric interviews assessing lifetime psychiatric disorders by DSM-IV criteria, using the Farsi version of the Schedule for Affective Disorders and Schizophrenia.
Results: The mean age of the children was 8.7, mothers, 40.1, and fathers, 34.6 years. Only 7.6% of the boys and 21.7% of the girls manifested ADHD without any other psychiatric comorbidity. The most common comorbid disorders were disruptive behavior disorders and anxiety disorders. The prevalence of lifetime ADHD in the parents was 45.8% and 17.7%, respectively. The rate for major depressive disorder in mothers and fathers was 48.1% and 43.0%, respectively.
Discussion: The clinical sample of ADHD children typically had at least one other psychiatric disorder, usually oppositional defiant disorder in boys and anxiety disorders in girls. The most common psychiatric disorder in the parents was mood disorder.
(PsycINFO Database Record (c) 2008 APA, all rights reserved) (from the journal abstract)

NeuroToxicology. 2009;30:31-36.
Low blood levels of lead and mercury and symptoms of attention deficit hyperactivity in children: A report of the children's health and environment research (CHEER) .
Ha M, Kwon HJ, Lim MH, et al.
Background: The goal of this study was to examine the association between low levels of lead and mercury in blood and symptoms of attention-deficit hyperactivity disorder (ADHD) among Korean children.
Methods: One thousand seven hundred and seventy eight children at 10 elementary schools in six South Korea cities participated in this study. Parents and guardians administered a questionnaire including Conners' parents rating ADHD scale to determine the presence of ADHD symptoms. In addition, clinical examinations of the children and determination of blood lead and mercury levels were included in the first Children's Health and Environment Research (CHEER) survey, which is now conducted annually in Korea.
Results: The risk for the appearance of ADHD symptoms was found to increase with the blood lead concentration. The mean blood lead concentration was low with a geometric mean of 1.8 (mu)g/dl. The odds ratios (95% confidence intervals) for the presence of ADHD symptoms were 1.28 (0.57, 2.86), 1.32 (0.63, 2.74), 1.65 (0.77, 3.56), and 1.98 (0.76, 5.13) in children with blood lead levels of 1-<1.5, -<2.5, -<3.5, and >3.5 (mu)g/dl, compared to those with blood lead levels of <1.0 (mu)g/dl; these results statistically represented a borderline trend (p for trend: 0.07). The blood lead level showed a significant positive association with the Conners' ADHD score (beta = 0.50, p < 0.0001). However, the blood mercury levels were not found to be significantly associated with ADHD symptoms in children. The geometric mean mercury concentration in the blood was 2.4 (mu)g/l.
Conclusions: The observed association between blood lead concentration and the appearance of ADHD symptoms in Korean children suggests that lead, even at low concentrations, is a risk factor for ADHD.

Journal of Psychoeducational Assessment. 2008 Sep;26:247-59.
An investigation of the General Abilities Index in a group of diagnostically mixed patients.
Harrison AG, DeLisle MM, Parker KCH.
The General Ability Index (GAI) was compared with Wechsler Adult Intelligence Scale-Third Edition (WAIS-III) Full Scale Intelligence Quotient (FSIQ) from the WAIS-III in data obtained from 381 adults assessed for reported learning or attention problems between 1998 and 2005. Not only did clients with more neurocognitively based disorders (i.e., learning disabilities, attention deficit hyperactivity disorder, and brain injury) demonstrate a larger discrepancy between GAI and FSIQ than did those with mainly psychological conditions (i.e., depression, anxiety, posttraumatic stress disorder), but specific neurocognitive diagnosis also moderated the relationship between these two indices. In neurocognitive disorders, GAI was found to be generally higher than FSIQ, a finding that distinguished this group from a nonclinical sample. There were

significant differences in GAI among the clinical groups, and FSIQ was closely related to GAI. Implications for use of the GAI in clinical practice are discussed.

Child Care Health Dev. 2009 Jan;35:120-29.
Deficits in motor co-ordination and attention at 3 years of age predict motor deviations in 6.5-year-old children who needed neonatal intensive care.
Hemgren E, Persson K.
Background: A total of 189 children without major impairments who needed neonatal intensive care (NIC) were followed up at ages 3 and 6.5 years.
Aim: To determine the prevalence of different motor deviations at age 6.5 years and the co-occurrence of attention deficits; also, to analyse the predictive ability of motor co-ordination and attention assessments at age 3 years for motor deviations at 6.5 years.
Method: A combined assessment of motor performance and behaviour (CAMPB) was used at the 3-year examination. The Test of Motor Impairment (TOMI) and the Motor-Perceptual Development (MPU) were used together with the criteria of the diagnostic and statistical manual of mental disorders (DSM-IV-TR) to define motor deviations.
Results: At 6.5 years 64% of the children showed a motor deviation either as a delay according to MPU, a problem according to TOMI or Developmental Coordination Disorder (DCD) according to DSM-IV-TR. Higher proportions of children with attention deficit (50%) were found in the DCD group. The predictive ability of CAMPB was analysed in two ways: when all children with either a co-ordination or attention deficit, or both, at 3 years were considered to be at risk for motor deviations at 6.5 years, the sensitivity reached 78% and the specificity was 42%. But when only the 3 year olds with a combined deficit were considered to be at risk, the sensitivity was 37% and the specificity 89%; however, a positive predictive value of 86% was reached.
Conclusion: At 6.5 years of age a majority of NIC children with no major impairments showed motor deviations. To fulfil the DCD criteria in DSM-IV-TR, a strict definition of motor deviations is recommended. Attention deficits are more prevalent among children with DCD. Deficits in motor co-ordination and/or attention in 3-year-old children are strong predictors of motor deviations and, especially, of DCD at 6.5 years of age.

Chin J Contemp Pediatr. 2008;10:726-27.
Electroencephalographic biofeedback for the treatment of attention deficit hyperactivity disorder in children.
Hou JH, Zhang Y, Xu C.
Objective: Attention deficit hyperactivity disorder (ADHD) is a common behavioral disorder in children. When the children fulfill cognition tasks, brain (theta) wave activity increases and (beta) wave activity weakens. This study aimed to explore the efficacy of electroencephalographic (EEG) biofeedback therapy for ADHD in children by assessing the changes of the ratio of brain (theta) to (beta) waves and the integrated visual and auditory continuous performance test (IVA-CPT).
Methods: EEG biofeedback therapy was performed in 30 children with ADHD. The ratio of brain (theta) to (beta) waves was measured before and after therapy. IVA-CPT was used to assess the effectiveness of biofeedback therapy.
Results: After two courses of treatment, the mean ratio of brain (theta) to (beta) waves in the 30 children with ADHD was significantly reduced from 12.32 (plus or minus) 4.35 (before treatment) to 6.54 (plus or minus) 1.27 ($P<0.01$). IVA-CPT demonstrated that the values of six indexes measured, including integrate reaction control quotient, integrate attention quotient, auditory and visual reaction control quotients, auditory and visual attention control quotients, were significantly increased after biofeedback therapy ($P<0.01$).
Conclusions: EEG biofeedback can reduce the ratio of brain (theta) to (beta) waves and lead to significant decreases in inattention and hyperactivity and it is effective for treatment of ADHD in children.

Cognitive and Behavioral Neurology. 2008 Sep;21:176-78.
Asymmetrical visual-spatial attention in college students diagnosed with ADD/ADHD.
Jones KE, Craver-Lemley C, Barrett AM.
Objective: Research indicates that individuals with attention deficit disorder (ADD)/attention deficit hyperactivity disorder (ADHD) may exhibit left-right asymmetric spatial attention, with deficient processing of stimuli in the left visual hemispace. However, there is controversy as to when this phenomenon can be observed.

Background: People with ADD/ADHD do not have obvious spatial bias when performing everyday tasks. Visual cancellation tasks have demonstrated behavioral asymmetry in ADD/ADHD, but results have not been consistent across studies. Children and older adults with ADD or ADHD have been assessed, but previous studies of college students with ADD/ADHD are not available.
Method: We tested 24 students with ADD or ADHD and 24 control students on a verbal and nonverbal cancellation task.
Results: The ADD/ADHD group made significantly more left-sided omission errors than controls on a letter cancellation task. This group difference was not observed for a shape cancellation task, however.
Conclusions: These results support possible left visual inattention in college students with ADD/ADHD. Studies of functional correlates of these attentional phenomena are needed.

Developmental Science. 2008 Sep;11:692-99.
Basic number processing deficits in ADHD: A broad examination of elementary and complex number processing skills in 9- to 12-year-old children with ADHD-C.
Kaufmann L, Nuerk HC.
ADHD (attention-deficit hyperactivity disorder) and academic difficulties are frequently associated, but to date this link is poorly understood. In order to explore which components of number processing and calculation skills may be disturbed in children with ADHD we presented a series of respective tasks to 9- to 12-year-old children with ADHD-combined type and matched children without ADHD (of any type) without concomitant dyscalculia and/or dyslexia. Overall, group differences were not significant regarding overlearned and explicitly trained simple and complex calculation skills. More basic number processing skills are--for instance--the ability to compare one-digit numbers according to their magnitude (so-called magnitude comparison), to count or to transcode numbers, i.e. to write down an Arabic number '21' in verbal dictation. Significant differences favouring control children in basic number processing skills were obtained in a number comparison task and in a dot enumeration task. Importantly, our results cannot be explained by group differences regarding specific working memory and executive function components. Thus, number processing skills and in particular the processing of numerical magnitude should be investigated in children diagnosed with ADHD even when no comorbid learning disabilities are reported.

Journal of Learning Disabilities. 2008 Sep;41:405-16.
ADHD and method variance: A latent variable approach applied to a nationally representative sample of college freshmen.
Konold TR, Glutting JJ.
This study employed a correlated trait-correlated method application of confirmatory factor analysis to disentangle trait and method variance from measures of attention-deficit/hyperactivity disorder obtained at the college level. The two trait factors were Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition (DSM-IV) Inattention and DSM-IV Hyperactivity-Impulsivity. The two source factors were self-reports and parent-reports. Data were collected for an epidemiological sample (N = 1,079) of college freshmen stratified for race/ethnicity, gender, and ability level according to national targets for the U.S. college population. Results revealed (a) parents' ratings were better measures of internalizing behavioral dimensions and that students' ratings were better measures of externalizing dimensions of behavior, (b) informants have a greater impact on behavior ratings than the behavioral construct that is presumed to be the primary cause of the behavior as measured by the CARE, (c) relationships among the method factors revealed a substantial amount of unique variance among informants, and (d) relationships among trait factors were largely within expectation.

Eur Child Adolesc Psychiatry. 2009;18:26-32.
Molecular genetic contribution to the developmental course of attention-deficit hyperactivity disorder.
Langley K, Fowler TA, Grady DL, et al.
Objective: The developmental trajectory of attention-deficit hyperactivity disorder (ADHD) is variable. Utilizing a longitudinally assessed sample, we investigated the contribution of susceptibility gene variants, previously implicated through pooled or meta-analyses, to the developmental course of Attention-Deficit Hyperactivity Disorder over time.

Methods: 151 children (aged 6-12) who met diagnostic criteria for ADHD were assessed using research diagnostic interviews during childhood and 5 years later in adolescence. Severity was defined as total number of ADHD symptoms at baseline and reassessment. Association with variants at DRD4, DRD5, and the dopamine transporter gene, DAT was analyzed using linear regression.
Results: As expected, affected individuals showed a decline in ADHD severity over time. The DRD4 48 bp VNTR 7-repeat and DRD5 CA(n) microsatellite marker 148 bp risk alleles were associated with persistent ADHD. Those possessing the DRD4 7 repeat risk allele showed less of a decline in severity at reassessment than those without the risk allele.
Conclusions: Those carrying the DRD4 7 risk allele showed greater symptom severity at follow-up and less ADHD reduction over time. These findings support the hypothesis that some susceptibility genes for ADHD also influence its developmental course.

Child Development. 2008 Nov;79:1853-68.
Early histories of school-aged children with attention-deficit/ hyperactivity disorder.
Loe IM, Balestrino MD, Phelps RA, et al .
In a prospective study of developmental outcomes in relation to early-life otitis media, behavioral, cognitive, and language measures were administered to a large, diverse sample of children at 2, 3, 4, 6, and 9-11 years of age (N = 741). At 9-11 years of age, 9% of the children were categorized as having attention-deficit/hyperactivity disorder (ADHD) based on parent report. Compared to the non-ADHD group, the ADHD group had higher (i.e., less favorable) scores on parent and teacher versions of the Child Behavior Checklist at all ages. Children in the ADHD group also had lower scores on cognitive and receptive language measures in preschool. The findings support the concept that ADHD is a cognitive as well as a behavioral disorder.

Journal of Attention Disorders. 2008 Sep;12:170-76.
Exercise responses in boys with attention deficit/hyperactivity disorder: Effects of stimulant medication.
Mahon AD, Stephens BR, Cole AS.
Objective: The effect of stimulant medication on exercise responses was studied in 14 boys (10.9 Â± 1.1 years) with attention deficit/hyperactivity disorder (ADHD).
Method: Exercise, with and without medication, was performed at 25 W, 50 W, and 75 W, followed by a peak exercise test.
Result: Submaximal heart rate (HR) was significantly higher by ~8 to 13 b min-super(-1) across the three intensities during the medication trial, but oxygen uptake (VO-sub-2), respiratory exchange ratio (RER), and perceived exertion were similar (p > .05). At peak exercise, VO-sub-2, HR, and work rate were attenuated (p â‰¤ .05) in the absence of medication but not RER or perceived exertion. The decreased peak exercise responses were apparent in 6 of 13 participants.
Conclusion: Stimulant medication raises submaximal HR but does not affect other cardiorespiratory measures or perceived exertion. Without medication physiological responses at peak exercise are attenuated in some but not all boys with ADHD.

Clin Psychol Rev. 2009 Feb;29:77-86.
Attention deficit hyperactivity disorder in African American children: What can be concluded from the past ten years?
Miller TW, Nigg JT, Miller RL.
Samuel et al. [Samuel, V. J., Curtis, S., Thornell, A., George, P., Taylor, A., Brome, D. R., et al. (1997). The unexplored void of ADHD and African-American research: A review of the literature. Journal of Attention Disorders, 1(4), 197-207.] reviewed the literature on Attention Deficit Hyperactivity Disorder (ADHD) in African Americans, and found a paucity of research. The present review of 73 articles updates this assessment of available research and presents the current understanding of ADHD symptoms, assessment, diagnosis, and treatment in African American children ages 3-18. The authors conducted a qualitative review, as well as a mini meta-analysis of 5 studies of ADHD symptoms and 5 studies of ADHD diagnosis to clarify the question of racial differences in prevalence. African American youth had more ADHD symptoms (Cohen's d = 0.45, p < .001), yet were diagnosed with ADHD only two-thirds as often as Caucasian youth (OR = .66, p < .001). This pattern was not explained by teacher rating bias or by SES, but may be influenced

by parent beliefs about ADHD, higher rates of risk, and lack of treatment access and utilization. Lower treatment rates may be related to high rates of classroom behavior problems among African American youth. Findings also suggest that existing assessment tools may not adequately capture ADHD manifestation in African Americans. Findings highlight the need for more investigation and awareness of relevant cultural issues to inform a culturally competent approach to assessment, diagnosis, and treatment of ADHD in African Americans.

J Child Adolesc Psychopharmacol. 2008;18:248-56.
Efficacy and safety of extended-release dexmethylphenidate compared with d,l-methylphenidate and placebo in the treatment of children with attention-deficit/hyperactivity disorder: A 12-hour laboratory classroom study.
Muniz R, Brams M, Mao A, et al.
Objective: This study compared the efficacy and safety of extended-release dexmethylphenidate (d-MPH-ER) 20 mg/day and 30 mg/day with extended-release racemic methylphenidate hydrochloride (d,l-MPH-ER) 36 mg/day and 54 mg/day, and placebo in children with attention-deficit/hyperactivity disorder (ADHD) in a laboratory classroom setting.
Methods: This multicenter, double-blind, crossover study included children (N = 84) 6-12 years of age, stabilized on total daily doses of 40 mg to 60 mg d,l-MPH or 20 mg/day or 30 mg/day d-MPH who were randomized to different treatment sequences. Primary efficacy was measured by the change from pre-dose in Swanson, Kotkin, Agler, M-Flynn, and Pelham (SKAMP) Rating Scale-Combined scores at 2 hours post-dose (d-MPH-ER 20 mg/day versus d,l-MPH- ER 36 mg/day). Adverse events were monitored throughout the study period.
Results: Mean change in SKAMP-Combined score at 2 hours post-dose was significantly larger for d-MPH-ER 20 mg/day versus d,l-MPH-ER 36 mg/day ($p < 0.001$). Both doses of d-MPH-ER had a more rapid onset and greater morning effect relative to d,l-MPH-ER while d,l-MPH-ER had a greater effect at the end of the 12-hour day. All active treatments provided a significant benefit over placebo at most time points to 12 hours post-dosing. Both treatments were well tolerated.
Conclusions: d-MPH-ER and d,l-MPH-ER improved ADHD symptoms and were well tolerated. While d-MPH-ER had a faster onset of action, d,l-MPH-ER retained greater effect at the end of the 12- hour classroom day.

Journal of Attention Disorders. 2008 Sep;12:141-48.
Long-term psychosocial and health economy consequences of ADHD, autism, and reading-writing disorder: A prospective service evaluation project .
Nydén A, Myrén KJ, Gillberg C.
Objective: The study aims to evaluate psychosocial, societal, and family cost consequences of a psychoeducational intervention program.
Methods: Sixty boys with ADHD, Asperger syndrome/high-functioning autism (AS/HFA), and reading and writing disorder (RD/WD) were allocated to participate in a service evaluation project. Every other boy in each diagnostic group was randomly allocated to receive either (a) a special education program (clinical index group) or (b) follow-up without the special education program (clinical comparison group). Nine years after initial assessments the stability of the psychosocial and economic resource consequences over time was studied.
Results: ADHD, AS/HFA, and RD/WD all had severe impact on family life quality. The societal costs were high, but no significant differences in resource use or in total costs were found between the clinical index and the comparison groups.
Conclusions: The results underscore the very long-term need for support including individually tailored reevaluations and carefully monitored intervention programs adapted to family needs and severity of child disorder.

Eur Child Adolesc Psychiatry. 2009;18:12-19.
A randomised controlled trial into the effects of food on ADHD.
Pelsser LMJ, Frankena K, Toorman J, et al.
The aim of this study is to assess the efficacy of a restricted elimination diet in reducing symptoms in an unselected group of children with Attention deficit/hyperactivity disorder (ADHD). Dietary studies have

already shown evidence of efficacy in selected subgroups. Twenty-seven children (mean age 6.2) who all met the DSM-IV criteria for ADHD, were assigned randomly to either an intervention group (15/27) or a waiting-list control group (12/27). Primary endpoint was the clinical response, i.e. a decrease in the symptom scores by 50% or more, at week 9 based on parent and teacher ratings on the abbreviated ten-item Conners Scale and the ADHD-DSM-IV Rating Scale. The intention-to-treat analysis showed that the number of clinical responders in the intervention group was significantly larger than that in the control group [parent ratings 11/15 (73%) versus 0/12 (0%); teacher ratings, 7/10 (70%) versus 0/7 (0%)]. The Number of ADHD criteria on the ADHD Rating Scale showed an effect size of 2.1 (cohen's d) and a scale reduction of 69.4%. Comorbid symptoms of oppositional defiant disorder also showed a significantly greater decrease in the intervention group than it did in the control group (cohens's d 1.1, scale reduction 45.3%). A strictly supervised elimination diet may be a valuable instrument in testing young children with ADHD on whether dietary factors may contribute to the manifestation of the disorder and may have a beneficial effect on the children's behaviour.

J Psychiatr Res. 2009;43:345-52.
Parsing the familiality of oppositional defiant disorder from that of conduct disorder: A familial risk analysis.
Petty CR, Monuteaux MC, Mick E, et al.
Background: Family risk analysis can provide an improved understanding of the association between attention-deficit/hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD), attending to the comorbidity with conduct disorder (CD).
Methods: We compared rates of psychiatric disorders in relatives of 78 control probands without ODD and CD (Control, N = 265), relatives of 10 control probands with ODD and without CD (ODD, N = 37), relatives of 19 ADHD probands without ODD and CD (ADHD, N = 71), relatives of 38 ADHD probands with ODD and without CD (ADHD + ODD, N = 130), and relatives of 50 ADHD probands with ODD and CD (ADHD + ODD + CD, N = 170).
Results: Rates of ADHD were significantly higher in all three ADHD groups compared to the Control group, while rates of ODD were significantly higher in all three ODD groups compared to the Control group. Evidence for co-segregation was found in the ADHD + ODD group. Rates of mood disorders, anxiety disorders, and addictions in the relatives were significantly elevated only in the ADHD + ODD + CD group.
Conclusions: ADHD and ODD are familial disorders, and ADHD plus ODD outside the context of CD may mark a familial subtype of ADHD. ODD and CD confer different familial risks, providing further support for the hypothesis that ODD and CD are separate disorders.

Ceska Slov Psychiatr. 2008;104:415-19.
Effect of medication on anthropometric characteristic of ADHD children.
Ptacek R, Kuzelova H, Paclt I, et al.
The study compares differences in parameters between the group of boys with diagnosis ADHD which used Ritalin medication and the group which did not. The results of the study significantly show the difference in anthropometric characteristics between these two groups, especially significant difference is in the signs of nutrition (% fat, BMI). Children using medication have lower percentage of body fat and lower BMI. These results are in correspondence with other studies.

J Child Adolesc Psychopharmacol. 2008;18:237-47.
Unexpected effects of methylphenidate in attention-deficit/hyperactivity disorder reflect decreases in core/secondary symptoms and physical complaints common to all children.
Rapport MD, Kofler MJ, Coiro MM, et al.
Hypotheses concerning unexpected, psychostimulant-related effects reported in previous studies were examined by separating behavioral/physical complaints highly specific to methylphenidate (MPH) from those that (a) may mimic core/secondary symptoms of the disorder, or (b) are commonly reported by unmedicated children in the general population. Sixty-five children with attention-deficit/hyperactivity disorder (ADHD) participated in a double-blind, placebo-controlled, within-subject (crossover) experimental design and received a placebo and four MPH doses in counterbalanced order following baseline assessment. Behavioral and physical complaints were significantly higher under baseline relative to placebo and the four immediate-release MPH conditions (5 mg, 10 mg, 15 mg, and 20 mg) across three symptom categories: ADHD core/secondary symptoms; symptoms commonly reported in the general population, including

unmedicated children with ADHD; and symptoms highly specific to MPH. No significant differences were found among active drug conditions. Past unexpected findings of psychostimulant effects in ADHD may be due to the inclusion of scale items that reflect core/secondary features of ADHD and normally occurring behavioral/physical complaints in children.

Med Care. 2009;47:105-14.
Mothers of children diagnosed with attention-deficit/hyperactivity disorder health conditions and medical care utilization in periods before and after birth of the child.
Ray GT, Croen LA, Habel LA.
Background: Analyzing health conditions and medical utilization of mothers of children with attention-deficit/hyperactivity disorder (ADHD) can shed light on biologic, environmental, and psychosocial factors relating to ADHD.
Objective: To examine health conditions, health care utilization, and costs of mothers of children with ADHD in periods before the child was diagnosed.
Methods: Using automated data from Northern California Kaiser Permanente we identified mothers of children with ADHD, mothers of children without ADHD, and mothers of children with asthma. Mothers' diagnostic clusters, health care utilization, and costs were compared. Mothers of children with ADHD were compared with mothers of children without ADHD and, separately, to mothers of children with asthma.
Results: Compared with mothers of children without ADHD, mothers of children with ADHD were more likely to be diagnosed with numerous medical and mental health problems in the 2 years after birth of their child, including depression [odds ratio (OR): 1.88], anxiety neuroses (OR: 1.64), obesity (OR: 1.70), and musculoskeletal symptoms (OR: 1.51). Results were similar for the year before delivery. Mothers of children with ADHD also had higher total health care costs per person in the year before ($1003) and the 2 years after ($953) the birth of their child. Mothers of children with ADHD also were diagnosed with more health conditions and had higher health care costs than mothers of children with asthma.
Conclusions: Our findings suggest that the likelihood of being diagnosed with ADHD is related to maternal conditions and use of health services that precede the child's diagnosis. Future studies are needed to clarify whether this is due to biologic, psychosocial, or environmental factors, or a combination.

Journal of Attention Disorders. 2008 Sep;12:177-90.
Neuropsychological functioning in subgroups of children with and without social perception deficits and/or hyperactivity--impulsivity.
Schafer V, Semrud-Clikeman M.
Objective: The purpose of this study is to ascertain whether there are differences among groups of children based on their social perception skills in visual perception and fluid reasoning to assist in more effective intervention planning.
Method: A total of 80 children were grouped on the basis of their performance on a social perception measure (Child and Adolescent Social Perception) and the presence or absence of hyperactive-impulsive behaviors. They were administered a battery of tests to determine whether the groups differed in their visual perceptual skills and fluid reasoning abilities.
Results: The groups with poor social perception significantly differed from groups with intact social perception on the Rey-O and Fluid Reasoning but not on the Judgment of Line Orientation or the Developmental Test of Visual Motor Integration.
Conclusion: A subgroup of children with ADHD demonstrates poor social perception skills and accompanying deficits in complex visual perception and fluid reasoning.

JAMA. 2009 Feb;301:724-26.
Atopic eczema and attention-deficit/hyperactivity disorder in a population-based sample of children and adolescents.
Schmitt J, Romanos M, Schmitt NM, et al.

Z Phytother. 2008;29:280-81.
Saint John's wort in ADHD: Pilot study with deficient extract fails to prove effectiveness.
Schulz V.

Journal of Attention Disorders. 2008 Sep;12:135-40.
Inattention, hyperactivity, and oppositional--Defiant symptoms in Brazilian adolescents: Gender prevalence and agreement between teachers and parents in a non-English speaking population.
Serra-Pinheiro MA, Mattos P, Regalla MAI.
Objective: To assess hyperactivity (H/I), inattention (IN), and oppositional-defiant (OP) symptoms in a nonclinical Brazilian sample of adolescents, and to investigate the association between scoring profiles of teachers and parents, symptom levels, and gender.
Method: Symptoms were assessed through the Swanson, Nolan, and Pelhman (SNAP-IV) Questionnaires distributed for teachers and parents to fill out. Score means and prevalence rates based on Criterion A of the Diagnostic and Statistical Manual of Mental Disorders (4th ed.) for ADHD or oppositional-defiant disorder were estimated. Agreement rates between teachers and parents were calculated for each group of symptoms. Mean scores were compared by gender.
Results: Between 7% and 33% of students were rated as having high scores of symptoms. Boys and girls had the same level of symptoms, when scored by parents. Teachers rated boys as having more H/I and OP symptoms. Parents gave scores significantly higher for H/I and OP symptoms, and teachers rated more students as inattentive.
Conclusions: H/I, IN, and OP symptoms were highly prevalent in this nonclinical sample. Few differences between boys and girls were observed in symptom levels. Teachers and parents have different scoring profiles for the different SNAP subscales and are probably influenced by cultural aspects.
(PsycINFO Database Record (c) 2008 APA, all rights reserved) (from the journal abstract)

Educational Research. 2008 Dec;50:347-60.
The impact of teacher factors on achievement and behavioural outcomes of children with Attention Deficit/Hyperactivity Disorder (ADHD): A review of the literature.
Sherman J, Rasmussen C, Baydala L.
Background: Attention Deficit/Hyperactivity Disorder (ADHD) is a common disorder known to be associated with behavioural and academic difficulties. Several treatment options are available for children with ADHD, such as medication and behavioural therapy. Although researchers have examined the efficacy of these approaches, much less is understood about how teacher factors, including attitudes and beliefs about ADHD and treatment options, can influence students' behavioural and learning outcomes.
Purpose: The goal of this review was to summarise the small set of relevant literature on the influence of teacher factors on academic and behavioural outcomes among children with ADHD, for the purpose of enhancing various outcomes for students with ADHD; to acknowledge the importance of teacher factors on student success; and to encourage additional research in this important domain.
Design and methods: We searched for relevant research articles using medical (MEDLINE, 1966 to April 2008), educational (ERIC, 1966 to April 2008), and psychological (PsycInfo, 1985 to April 2008) databases. All English sources, including peer-reviewed articles, dissertation abstracts, review and opinion papers, and conference presentations or posters, were screened to determine whether they fit the predictor and dependent variables. Teacher factors were considered the predictor, or independent variables, and included search terms for factors such as attitudes, beliefs, tolerance and training. Student outcomes, including leadership, academic achievement, social skills and depression were considered the dependent variables. The population of interest was North American elementary school-aged children (grades 1 to 5-6 inclusive, with approximate ages of 5 to 12 years old) with ADHD (also searched as ADD, AD/HD, attention disorders, Attention-deficit Disorder, Attention-deficit/Hyperactivity Disorder and hyper kinetic disorders). Study design was not specified, and we accepted case studies, large-sample experimental studies and descriptive educational projects.
Conclusions: Teacher factors can have profound impacts on various outcome measures. For instance, gesture use by teachers can influence performance on certain academic puzzles by students with ADHD, and teachers' opinions about specific treatment options can impact student behaviour and the types of interventions implemented in the classroom. Teachers who demonstrate patience, knowledge of intervention techniques, an ability to collaborate with an interdisciplinary team, and a positive attitude towards children with special needs can have a positive impact on student success. The ways in which these results relate to

clinical practice, particularly considering the influential role of teachers in diagnosis and treatment efficacy, are discussed.
(PsycINFO Database Record (c) 2009 APA, all rights reserved) (from the journal abstract)

Child Adolesc Ment Health. 2009;14:20-23.
Stimulant induced psychosis.
Shibib S, Chalhoub N.
Background: Stimulants are used as a first line option in the treatment of ADHD and are amongst the safest drugs used in children and adolescents. The potential for psychotic side effects are well known, but reported as rare.
Method: We are reporting four cases of stimulant induced psychosis which presented over a 2 year period in a small community CAMHS setting.
Results: Our findings suggest that stimulant induced psychosis occurs. The symptoms in the early stages of the psychotic episode mimicked ADHD. Long acting preparations appeared to be a contributory factor to the development of psychotic side effects. Rechallenge with stimulant medication is described.
Conclusions: Psychosis is an important, unpredictable side effect of stimulant medication. Symptoms resolve with discontinuation of treatment. Remergence of ADHD symptoms are rapid and rechallenge is often indicated. It would be advisable for all professionals involved in the care and treatment of patients with ADHD to receive mental health training to aid the early recognition and appropriate management of such side effects.
(copyright) 2009 The Author. Journal compilation (copyright) 2009 Association for Child and Adolescent Mental Health

---

Acta Paediatr Int J Paediatr. 2009;98:397-402.
Validity and clinical feasibility of the ADHD rating scale (ADHD-RS) a Danish Nationwide Multicenter Study.
Szomlaiski N, Dyrborg J, Rasmussen H, et al.
Aim: To establish the validity of a Danish version of the Attention Deficit Hyperactivity Disorder Rating Scale (ADHD-RS), secondly to present national norm scores compared to that of United States and other European data and thirdly to evaluate ADHD-RS when used for monitoring treatment effectiveness.
Methods: A Danish translation of the ADHD-RS was used on a normative sample of 837 children. Two clinical samples, 138 hyperkinetic disorder (HKD) cases and 110 clinical controls were recruited from eleven Danish Child and Adolescent Mental Health (CAMH) centres and assessed according to usual clinical standards. The HKD children were rated by parents and teachers at baseline and at follow-up 3 months later.
Results: Internal validity of ADHD-RS was high and the factor structure supported the diagnostic classification system ICD-10. The questionnaire discriminated HKD patients in a mixed clinical sample, and was sensitive to change in symptom load as measured before and after commencing of the treatment.
Conclusion: The Danish version of ADHD-RS is valid and clinically feasible when measuring HKD symptom load in a CAMH-setting. The questionnaire provides useful data in patient management, quality improvement and service planning as well as in effectiveness studies of different interventions for patients with HKD and related disorders in routine clinical settings.
(copyright) 2008 The Author(s)

J Child Adolesc Psychopharmacol. 2008;18:265-70.
Utility of objective measures of activity and attention in the assessment of therapeutic response to stimulants in children with attention-deficit/ hyperactivity disorder.
Teicher MH, Polcari A, McGreenery CE.
Background and purpose: Attention-deficit/hyperactivity disorder (ADHD) is a highly prevalent disorder that can respond dramatically to medication, if dose is appropriately titrated. Studies suggest that computer measures of attention cannot be used for titration as they show improvement on doses too low to produce clinical benefits. We assessed whether measures of motor activity and attention using the McLean Motion Attention Test (M-MAT(trademark)) could identify doses associated with optimal clinical response.
Methods: Eleven boys (9.6 (plus or minus) 1.8 years), receiving treatment with methylphenidate, and meeting DSM-IV criteria for ADHD, participated in this triple-blind (parent, child, rater), within-subject, efficacy study. Subjects received 1 week each of placebo, low (0.4 mg/kg), medium (0.8 mg/kg), and high (1.5 mg/kg) daily doses of methylphenidate. Parents rated response using an index of clinical global improvement.

Results: In 9/11 subjects, the dose that produced the best improvement on M-MAT(trademark) measures was also the dose that produced the best clinical outcome (p < 10-5). Parents rated response to this dose significantly better than response to previously prescribed treatment. Objective measures of primarily activity and secondarily attention responded to treatment in a manner concordant with clinical ratings, suggesting that these measures have ecological validity, and the potential to facilitate medication management and titration.

Journal of the American Academy of Child & Adolescent Psychiatry. 2008 Sep;47:977-80.
Paying attention to stimulants: Height, weight, and cardiovascular monitoring in clinical practice.
Towbin K.
Comments on two original articles: "The effects of stimulants on height and weight: A review of the literature," by S. V. Faraone, J. Biederman, C. P. Morley, and T. J. Spencer (see record 2008-12076-006); and "Cardiovascular monitoring of children and adolescents with heart disease receiving stimulant drugs. A scientific statement from the American Heart Association Council on Cardiovascular Disease in the Young Congenital Cardiac Defects Committee and the Council on Cardiovascular Nursing," by V. I. Vetter, J. Elia, C. Erickson, et al (2008). These two recent literature reviews bear particularly close reading. The first, published in this issue of the Journal, examines data on the association between stimulant use and children's growth. The second appeared recently in Circulation and is accessible at http://circ.ahajournals.org/cgi/reprint/CIRCULATIONAHA.107.189473. It summarizes data on the cardiovascular effects of stimulants and provides relevant recommendations for prescribers. Together, these two articles offer information that clinicians should know and may wish to offer to parents and children.

Journal of Logic, Language and Information. 2008 Oct;17:467-87.
Discourse processing in attention-deficit hyperactivity disorder (ADHD).
van Lambalgen M, van Kruistum C, Parigger E.
ADHD is a psychiatric disorder characterised by persistent and developmentally inappropriate levels of inattention, impulsivity and hyperactivity. It is known that children with ADHD tend to produce incoherent discourses, e.g. by narrating events out of sequence. Here the aetiology of ADHD becomes of interest. One prominent theory is that ADHD is an executive function disorder, showing deficiencies of planning. Given the close link between planning, verb tense and discourse coherence postulated in van Lambalgen and Hamm (The proper treatment of events, 2004), we predicted specific deviations in the verb tenses produced by children with ADHD. Here we report on an experiment corroborating these predictions.

J Am Acad Child Adolesc Psychiatry. 2008;47:912-20.
Children's stigmatization of childhood depression and ADHD: Magnitude and demographic variation in a national sample.
Walker JS, Coleman D, Lee J, et al.
Objective: To estimate the magnitude of stigmatizing attitudes toward peers with depression or attention-deficit/hyperactivity disorder (ADHD) in a national sample of children ages 8 to 18 and to examine variation in level of stigma by school location, region of the United States, grade level, race/ethnicity, or sex.
Method: Surveys were administered to 1,318 children and adolescents. Respondents were randomly assigned to depression, ADHD, or asthma conditions and were presented with a vignette about a peer with one of the conditions. Participants responded to items assessing positive and negative attributions, social distance, and family attitudes. Mean differences were tested for statistical significance and effect sizes were computed.
Results: Respondents were more likely to make negative attributions about peers with ADHD and depression versus asthma, particularly regarding the likelihood of antisocial behavior and violence (Cohen d range 0.78-1.35, large effect sizes). Moderate effect sizes were found for preferences for social distance from peers with ADHD (d= 0.37) and depression (d= 0.45). Effects were found for perceptions of negative family attitudes toward both mental health conditions, with depression (d = 0.78) seen as even more stigmatized than ADHD (d = 0.47). The level of stigmatization was relatively constant across demographic variables, with the exception of greater stigmatization evident in Asian/Pacific Islander youths.
Conclusions: Across most items, both depression and ADHD were more stigmatized than asthma, with depression more stigmatized than ADHD. The perception of likelihood of violence and antisocial behavior

was particularly high for both ADHD and depression, greatly exceeding the real-world association for depression.

Environ Health Perspect. 2008;116:1401-06.
Case control study of blood lead levels and attention deficit hyperactivity disorder in Chinese children.
Wang HL, Chen XT, Yang B, et al.
Background: Attention deficit/hyperactivity disorder (ADHD) and lead exposure are high-prevalence conditions among children.
Objective: Our goal was to investigate the association between ADHD and blood lead levels (BLLs) in Chinese children, adjusting for known ADHD risk factors and potential confounding variables.
Methods: We conducted a pair-matching case-control study with 630 ADHD cases and 630 non-ADHD controls 4-12 years of age, matched on the same age, sex, and socioeconomic status. The case and control children were systematically evaluated via structured diagnostic interviews, including caregiver interviews, based on the Diagnostic and Statistical Manual of Mental Disorders, 4th ed., revised criteria (DSM-IV-R). We evaluated the association between BLLs and ADHD using the Pearson chi-square test for categorical variables and the Student t-test for continuous data. We then performed conditional multiple variables logistic regression analyses with backward stepwise selection to predict risk factors for ADHD.
Results: There was a significant difference in BLLs between ADHD cases and controls. ADHD cases were more likely to have been exposed to lead during childhood than the non-ADHD control subjects, with adjustment for other known risk factors [children with BLLs (greater-than or equal to) 10 (mu)g/dL vs. (less-than or equal to) 5 (mu)g/dL; OR = 6.0; 95% confidence interval (CI) = 4.10-8.77, $p < 0.01$; 5-10 g/dL vs. (less-than or equal to) 5 (mu)g/dL, OR = 4.9; 95% CI = 3.47-6.98, $p < 0.01$]. These results were not modified by age and sex variables.
Conclusions: This was the largest sample size case-control study to date to study the association between BLLs and ADHD in Chinese children. ADHD may be an additional deleterious outcome of lead exposure during childhood, even when BLLs are < 10 (mu)g/dL.

The Journal of Pediatrics. 2008 Sep;153:414-419e1.
Cigarette smoking associated with attention deficit hyperactivity disorder.
Wilens TE, Vitulano M, Upadhyaya H, et al.
Objective: To evaluate the association between attention deficit hyperactivity disorder (ADHD) and severity of physical dependence on nicotine in a controlled study of adolescents and young adults with ADHD.
Study design: In controlled longitudinal family studies of ADHD, we examined self-reports on the modified Fagerström Tolerance Questionnaire (mFTQ) for degrees of physical dependence on nicotine.
Results: We obtained mFTQ data from 80 ADHD probands and 86 control probands (mean age, 19.2 years). The smokers with ADHD had significantly higher scores on the mFTQ, indicative of more severe physical dependence on nicotine. Similarly, in current smokers, a positive linear relationship was found between mFTQ score and both inattentive and hyperactive ADHD symptoms. Environmental factors, such as current parental smoking, peer smoking, and living with a smoker, all increased the risk for smoking in those with ADHD compared with controls.
Conclusion: Male and female smokers with ADHD manifest more severe physical dependence on smoking compared with controls. Important environmental factors appear to add to the risk of smoking associated with ADHD. (from the journal abstract)

Journal of Attention Disorders. 2008 Sep;12:162-69.
Growing out of ADHD: The relationship between functioning and symptoms.
Young S, Gudjonsson GH.
Objective: The objective is to ascertain whether people in partial remission (IPR) or in full remission (IR) of their ADHD symptoms continue to have neuropsychological deficits and clinical and psychosocial problems.
Method: IPR and IR groups are compared with fully symptomatic ADHD patients and normal controls.
Results: The results show a decline across the patient groups indicating that symptom remission is associated with improvement in neuropsychological, clinical, and psychosocial problems. The two symptomatic (ADHD and IPR) groups have the most marked psychosocial and drug-related problems, and they seem to continue to attempt to access help by presenting to adult psychiatric services. However, the IR group continues to have neuropsychological problems in comparison to the normal controls.

Conclusion: Neuropsychological functioning, clinical, and psychosocial problems seem to be closely associated with ADHD symptoms and improve steadily with remission. However, some residual problems persist for which the patients seek psychiatric help.

Per ricevere la newsletter iscriversi al seguente indirizzo:
http://crc.marionegri.it/bonati/adhdnews/subscribe.html

Iniziativa nell'ambito del Progetto di ricerca indipendente AIFA
"*Sicurezza a lungo termine dei farmaci utilizzati nel trattamento di bambini in età scolare con sindrome da deficit di attenzione e iperattività ed epidemiologia della malattia nella popolazione italiana*".

ISTITUTO DI RICERCHE FARMACOLOGICHE MARIO NEGRI
DIPARTIMENTO DI SALUTE PUBBLICA
Laboratorio per la Salute Materno Infantile
Via Giuseppe La Masa, 19 - 20156 Milano MI - Italia - www.marionegri.it
tel +39 02 39014.511 - fax +39 02 3550924 - mother_child@marionegri.it