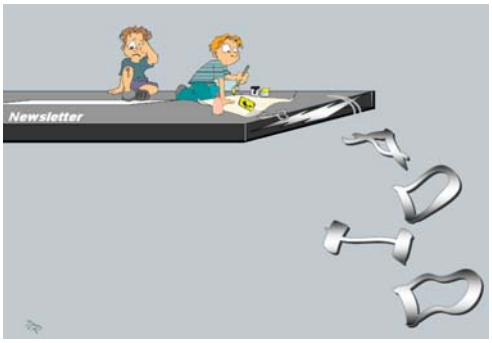

ADHD
ATTENTION DEFICIT HYPERACTIVITY DISORDER

Laboratorio per la Salute Materno Infantile

MARIO NEGRI
ISTITUTO DI RICERCHE FARMACOLOGICHE

NEWSLETTER **Numero 9 - Settembre 2008**

J Can Acad Child Adolesc Psychiatry. 2008;17:160.
Combination of atomoxetine and methylphenidate in attention deficit/hyperactivity disorder: A case report.
Agarwal V, Sitholey P.

J Child Psychol Psychiatry Allied Discip. 2008;49:915-23.
Feasibility and behavioral effects of an at-home multi-night sleep restriction protocol for adolescents.
Beebe DW, Fallone G, Godiwala N, et al.
Background: Sleep deprivation is common among adolescents and has been associated with adverse behavioral and educational outcomes. However, it is difficult to draw strong causal conclusions because of a dearth of experimental sleep research. In part, this appears related to methodological challenges when working with this population. This study tested the feasibility and behavioral effects of a multi-night, at-home experimental sleep restriction protocol in a sample of adolescents.
Methods: Twenty healthy adolescents aged 13.9-16.9 years were enrolled in a three-week sleep manipulation protocol using a counterbalanced cross-over experimental design. The protocol included a baseline week, followed in random order by a short sleep week (Monday-Friday nights limited to 6.5 hours time in bed) and an extended sleep week (10 hours lights-out time in bed Monday-Friday nights). Sleep was monitored via self-report and objective actigraphy. These were reviewed with participants and parents on the Saturdays at the end of each week, when parents and participants also completed behavior rating questionnaires.
Results: One participant dropped out of the study, but each of the remaining 19 displayed markedly less sleep in the short sleep condition than the extended sleep condition (average nightly gap ~2.5 hours). Data also reflected indirect effects of sleep deprivation that are consistent with an increase in homeostatic sleep drive. Compared to the extended sleep week, parents during the short sleep week reported that the participants displayed significantly greater problems with sleepiness, attention, oppositionality/irritability, behavior regulation, and metacognition. Participant self-report results were similar, though less robust.
Conclusions: A multi-night, at-home sleep manipulation protocol for use with adolescents is indeed feasible. This study also provided the first experimental evidence that chronic sleep restriction during adolescence is causally related to a wide range of behavioral deficits.

J Child Neurol. 2008;23:1036-42.
Attitudes toward attention-deficit hyperactivity disorder (ADHD) treatment: Parents' and children's perspectives.
Berger I, Dor T, Nevo Y, et al.
Attitudes toward pharmacological treatment may be a major factor contributing to adherence to such treatment. In the current study, attitudes toward methylphenidate treatment among 50 children diagnosed with attention-deficit hyperactivity disorder (ADHD) and their parents were assessed. Authors of this study

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.

have found that the study population is concerned and suspicious toward methylphenidate treatment. Most participants were exposed to negative information even before treatment initiation, which caused many participants to consult other sources and postpone the treatment initiation. Although experiencing methylphenidate as safe and effective (after 23.5 months of treatment), the leading cause of negative attitudes is the concern regarding long-term effects. The single most effective factor regarding the attitude toward methylphenidate treatment is the neurologist's explanation. It is concluded that the pediatric neurologist has a crucial role in affecting attitudes of children and parents toward methylphenidate treatment.

J Can Acad Child Adolesc Psychiatry. 2008;17:131-36.

Documenting adherence to psychostimulants in children with ADHD.

Charach A, Gajaria A, Skyba A, et al.

Objective: This study evaluates the validity, inter-rater reliability, and stability over 3 months of a semi-structured telephone interview measuring adherence to stimulant treatment, the Stimulant Adherence Measure, against the Medication Event Monitoring System (MEMS(registered trademark)).
Methods: Clinic-referred children (N=22, age 11.85 (plus or minus) 2.1 yrs) using psychostimulants for DSM-IV attention-deficit/hyperactivity disorder (ADHD) were eligible. Families used a MEMS(registered trademark) device for the primary stimulant medication. Children and parents participated in a semi-structured telephone interview, the Stimulant Adherence Measure, for 3 consecutive months. Parent reports for previous 7 days and 28 days and child report for previous 7 clays of medication use were compared to MEMS(registered trademark) report. Inter-rater reliability and interview order were also examined.
Results: Nineteen children and parents completed (86%). Agreement between MEMS(registered trademark) and parent report for previous 7 clays at months 1, 2 and 3 (ICC=0.829, p<0.001; ICC=0.663, p<0.05; ICC=0.878, p<0.001 respectively) and for 28 clays at months 1, 2 and 3 (ICC=0.793, p<0.001; ICC=0.907, p<0.001; ICC=0.806, p<0.001 respectively) was good to excellent. Agreement between MEMS(registered trademark) and child report for 7 days at months 1, 2 and 3 (ICC=0.773, p<0.001, ICC=0.542, p<0.05, ICC=0.606, p<0.05 respectively) was good. Inter-rater reliability was excellent (ICC=0.956, p<0.001). There was no interview order effect for parents (F=1.771, p>0.05) or children (F=1.621, p>0.05).
Conclusion: The Stimulant Adherence Measure provides a valid and reliable method for determining stimulant medication use by children with ADHD.

Neuropsychobiology. 2008;57:131-38.

No evidence of an association between norepinephrine transporter gene polymorphisms and attention deficit hyperactivity disorder: A family-based and case-control association study in a Korean sample.

Cho SC, Kim JW, Kim BN, et al.

Neurobiological and pharmacological research has suggested that dysregulation of the central noradrenergic systems might be involved in the pathophysiology of attention deficit hyperactivity disorder (ADHD). Previous studies have demonstrated that the norepinephrine transporter gene (SLC6A2) is associated with ADHD. The aims of this study were to examine the association of the SLC6A2 G1287A and -3081(A/T) polymorphisms with ADHD in Korean children and adolescents, and to determine the relationships of the genotypes of these two polymorphisms with continuous performance test results and the Junior Temperament and Character Inventory profiles of ADHD. In a case-control study, we assessed 186 ADHD probands and 150 normal controls; 109 trios were studied in a family-based association analysis. There were no significant differences in the genotype or allele frequencies of the SLC6A2 G1287A and -3081(A/T) polymorphisms between the ADHD and control groups (p > 0.05). In the transmission disequilibrium test analyses, there was no evidence for biased transmission of any of the alleles of the SLC6A2 G1287A and -3081(A/T) polymorphisms. In the haplotype analyses of these two polymorphisms, the global and individual (chi)2 tests showed no significant associations between any of the haplotypes and ADHD. There were no significant differences with respect to the continuous performance test results and the Junior Temperament and Character Inventory profiles in the ADHD probands according to the genotypes of the SLC6A2 G1287A and -3081(A/T) polymorphisms. Our findings do not support SLC6A2 as a major genetic susceptibility factor in ADHD.

CNS Spectr. 2008;13:614-20.
Long-term effectiveness and safety of lisdexamfetamine dimesylate in school-aged children with attention-deficit/hyperactivity disorder.
Findling RL, Childress AC, Krishnan S, et al.
Introduction: Lisdexamfetamine dimesylate (LDX), a prodrug stimulant, is indicated for attention-deficit/hyperactivity disorder (ADHD) in children 6-12 years of age and in adults. In short-term studies, once-daily LDX provided efficacy throughout the day. This study presented here was conducted to assess the long-term safety, tolerability, and effectiveness of LDX in 6- to 12-year-olds with ADHD.
Methods: This open-label, multicenter, single-arm study enrolled children with Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition-Text Revision criteria for ADHD. Following 1-week screening and washout periods, subjects were titrated to LDX 30, 50, or 70 mg/day over 4 weeks and placed on maintenance treatment for 11 months. The ADHD Rating Scale and Clinical Global Impression-Improvement scale measured effectiveness.
Results: Of 272 subjects receiving LDX, 147 completed the study. Most adverse events were mild to moderate and occurred during the first 4 weeks. There were no clinically meaningful changes in blood pressure or electrocardiographic parameters. From baseline to endpoint, mean ADHD Rating Scale scores improved by 27.2 points (P<.0001). Improvements occurred during each of the first 4 weeks, and were maintained throughout. Based on Clinical Global Impression-Improvement scale scores, >80% of subjects at endpoint and >95% of completers at 12 months were rated "improved."
Conclusion: Long-term 30, 50, and 70 mg/day LDX was generally well tolerated and effective in children with ADHD.

J Child Neurol. 2008;23:981-90.
Methylphenidate in children with oppositional defiant disorder and both comorbid chronic multiple tic disorder and ADHD.
Gadow KD, Nolan EE, Sverd J, et al.
Our primary objective was to determine if immediate-release methylphenidate is an effective treatment for oppositional defiant disorder diagnosed from mother's report in children with both chronic multiple tic disorder and attention-deficit hyperactivity disorder (ADHD). Children (n = 31) aged 6 to 12 years received placebo and 3 doses of methylphenidate twice daily for 2 weeks each under double-blind conditions and were assessed with ratings scales and laboratory measures. Results indicated significant improvement in both oppositional and ADHD behaviors with medication; however, the magnitude of treatment effect varied considerably as a function of disorder (ADHD > Oppositional behaviors), informant (teacher > mother), assessment instrument, and specific oppositional behavior (rebellious > disobeys rules). Drug response was comparable with that in children (n = 26) who did not have diagnosed oppositional defiant disorder, but comorbidity appeared to alter the perceived benefits for ADHD according to mother's report. Methylphenidate is an effective short-term treatment for oppositional behavior in children with comorbid ADHD and chronic multiple tic disorder.

Clin Child Psychol Psychiatry. 2008;13:343-63.
Fitting square pegs into round holes: The challenge of coping with attention-deficit hyperactivity disorder.
Gallichan DJ, Curle C.
This study aimed to further our understanding of young people's perspectives on attention-deficit hyperactivity disorder (ADHD), with particular reference to social context and coping. Twelve young people (aged 10 years 11 months to 17 years 4 months) took part in semi-structured interviews. These were transcribed verbatim and analysed using grounded theory to extract themes and link these into an over-arching model. The model suggested a reciprocal relationship between young people and their social context, with the challenges of ADHD formulated as a mismatch between the two; young people were like square pegs trying to fit into rigid round holes. This 'vicious cycle' led young people to feel out of control and have low self-esteem. ADHD was experienced as less challenging when the environment was adaptable and flexible, and when young people experienced the support and acceptance of others. Such environments may motivate young people to make their own changes, and fostered a sense of agency and positive sense of self. The understanding of others and the willingness to adapt the environment to meet individual needs may ultimately benefit these young people's senses of agency and self-esteem.

J Child Psychol Psychiatry Allied Discip. 2008;49:958-66.
Neuropsychological outcome in adolescents/young adults with childhood ADHD: Profiles of persisters, remitters and controls.
Halperin JM, Trampush JW, Miller CJ, et al.
Background: This study examined neuropsychological functioning in a longitudinal sample of adolescents/young adults with attention deficit/hyperactivity disorder (ADHD) and controls as a function of the persistence of ADHD. We hypothesized that measures of executive processes would parallel adolescent clinical status, with ADHD-persisters, but not remitters, differing significantly from controls. In contrast, persisters and remitters were hypothesized to perform similarly, and different from controls, on tasks requiring less effortful processing.
Methods: Ninety-eight participants diagnosed with ADHD in childhood were reevaluated approximately 10 years later. Eighty-five never-ADHD controls similar in age, IQ, and sex distribution served as a comparison group. Participants were administered a psychiatric interview and neuropsychological test battery.
Results: Those with childhood ADHD demonstrated broad neuropsychological deficits relative to controls. When the group with childhood ADHD was subdivided based on adolescent ADHD status, compared to controls, both persisters and remitters showed deficient perceptual sensitivity and response variability, and increased ankle movements recorded by a solid-state actigraph. Only persisters differed from controls on several measures of more effortful executive processes.
Conclusions: Findings provide preliminary support to the hypothesis that ADHD is associated with early-appearing and enduring subcortical dysfunction, while recovery over the course of development is associated with improvements in executive control functions.

J Child Psychol Psychiatry Allied Discip. 2008;49:781-91.
Emotional processing in male adolescents with childhood-onset conduct disorder.
Herpertz SC, Huebner T, Marx I, et al.
Background: Boys with early onset of conduct disorder (CD), most of whom also meet diagnostic criteria of a comorbid attention deficit hyperactivity disorder (ADHD), tend to exhibit high levels of aggression throughout development. While a number of functional neuroimaging studies on emotional processing have been performed in antisocial adults, little is known about how CD children process emotional information.
Method: Functional magnetic resonance imaging data were analyzed in 22 male adolescents aged 12 to 17 years with childhood-onset CD (16 of them with comorbid ADHD) compared to 22 age-matched male healthy controls. In order to consider the likely confounding of results through ADHD comorbidity, we performed a supplementary study including 13 adolescent subjects with pure ADHD who were compared with healthy controls. To challenge emotional processing of stimuli, a passive viewing task was applied, presenting pictures of negative, positive or neutral valence.
Results: When comparing CD/combined disorder patients with healthy controls, we found enhanced left-sided amygdala activation in response to negative pictures as compared to neutral pictures in the patient group. In addition, these boys exhibited no reduced activation in the orbitofrontal, anterior cingulate and insular cortices. By contrast, children with pure ADHD did not show any abnormalities in amygdala activation but showed decreased neural activity in the insula only in response to negative pictures.
Conclusions: Increased rather than reduced amygdala activation found in our study may indicate an enhanced response to environmental cues in adolescents with early-onset CD (most of whom also met the condition of ADHD), and is not consistent with the assumption of a reduced capacity to take note of affective information in the social environment. Further studies with an emphasis on developmental aspects of affect regulation are needed to clarify the relationship between CD and adult personality pathology associated with different modes of persistent antisocial behavior.

School Psychology Quarterly. 2008 Sep;23:418-35.
Teacher ratings of ADHD symptoms in ethnic minority students: Bias or behavioral difference?
Hosterman SJ, DuPaul GJ, Jitendra AK.
Disproportionate placement of African American and Hispanic students into disability and special education categories may result from true behavioral and cognitive differences, bias in assessment and referral, or some combination of the two. Studies of commonly used ADHD rating scales suggest teacher bias may contribute to placement discrepancies. This investigation compared teacher ratings of ADHD symptoms on the Conner's Teacher Rating Scale-Revised Long Version (CTRS-R:L; Conners, 1997) and the ADHD-IV: School Version (DuPaul, Power, Anastopoulous, & Reid, 1998), with objective classroom observations from the Behavioral Observation of Students in Schools code (BOSS; Shapiro, 2003). Participants were first

through fourth grade students (N = 172; 120 male) classified as Caucasian (n = 112) or ethnic minority (17 African American, 38 Hispanic, 5 African American and Hispanic). Contrary to hypothesis, results showed teacher ratings of ethnic minority students were more consistent with direct observation data than were ratings of Caucasian students. Findings suggest teacher ratings of ethnic minority students may more accurately reflect true behavioral levels.

J Med Genet. 2008;45:519-24.
X-linked ichthyosis (steroid sulfatase deficiency) is associated with increased risk of attention deficit hyperactivity disorder, autism and social communication deficits.
Kent L, Emerton J, Bhadravathi V, et al.
Background: X-linked ichthyosis (XLI) (steroid sulfatase deficiency) is caused by deletions or point mutations of the steroid sulfatase (STS) gene on chromosome Xp22.32. Deletions of this region can be associated with cognitive behavioural difficulties including autism. Animal work suggests the STS gene may be involved in attentional processes. We have therefore undertaken a systematic study of autism and attention deficit hyperactivity disorder (ADHD) in boys with XLI.
Methods: Cases of XLI were recruited from families originally ascertained when pregnancies with STS deficiency were identified through a routine maternal screening programme. Boys with XLI were assessed for ADHD and autism using standardised questionnaires and interviews. Deletions of the STS gene were identified and characterised by analysis of genomic DNA and/or fluorescent in situ hybridisation.
Results: 25 boys with XLI were assessed for autism and ADHD. 40% fulfilled DSM-IV criteria for a diagnosis of ADHD, 80% of which were inattentive subtype. ADHD diagnoses were present in those with both deletions and presumed point mutations of STS. Additionally, five boys, from three unrelated families, fulfilled criteria for an autistic spectrum disorder or related language/communication difficulty, and all had an unusually large deletion of the STS gene with loss of the neuroligin 4 (NLGN4) gene. None of the boys with the typical deletion or presumed point mutations of STS demonstrated autistic difficulties.
Conclusions: STS deficiency may be a risk factor for ADHD with predominantly inattentive symptoms. Boys with XLI and large deletions encompassing STS and NLGN4 are at increased risk of developing autism and related disorders.

School Psychology Quarterly. 2008 Sep;23:407-17.
Efficacy of an organization skills intervention to improve the academic functioning of students with attention-deficit/hyperactivity disorder.
Langberg JM, Epstein JN, Urbanowicz CM, et al.
Children with attention-deficit/hyperactivity disorder (ADHD) exhibit significant academic impairments, as evidenced by poor academic achievement, grade retention, and school dropout. Deficits in organization skills may contribute to these academic impairments, as children with ADHD frequently lose assignments, misplace their completed work, and have difficulty planning for tests. The present study examined the pilot efficacy of an 8-week organization skills intervention for children with ADHD. Thirty-seven children were randomly assigned to receive the intervention immediately or to a wait-list control. Participants made significant improvements in organization and homework management skills during the intervention and these gains were maintained at 8-week follow-up. Parents of children in the intervention group reported decreased homework problems. Children in the intervention group also demonstrated pre-post gains on teacher ratings of academic impairment and GPA. This study suggests that targeted academic skills interventions have the potential to improve overall academic performance among children with ADHD.

Journal of Emotional and Behavioral Disorders. 2008 Sep;16:163-77.
School-based service use by youth with ADHD in public-sector settings.
Leslie LK, Lambros KM, Aarons GA, et al.
This study investigates rates and predictors of school-based services (SBSs) for 390 youth meeting criteria for Attention Deficit Hyperactivity Disorder and served in the San Diego public sectors. Only 60% of youth had received an Attention Deficit Hyperactivity Disorder diagnosis; these youth were younger, male, Caucasian (versus Latino), and active to public mental health and special education (Emotional Disturbance category) at enumeration of study participants. Higher rates of SBSs (64%) were revealed than in community samples. Only 26% accessed multimodal treatment including SBSs, medication, and mental health. In multivariate modeling, SBSs displayed a curvilinear relationship with age, which may explain previously conflicting results regarding that relationship. Youth with private insurance or receiving mental health or

medication were more likely to receive SBSs. Gender, race/ethnicity, and caregiver education, health, and mental health were not related to SBSs use. These findings may reflect sample characteristics. Further exploration of factors influencing SBSs use in different populations is warranted.
(PsycINFO Database Record (c) 2008 APA, all rights reserved) (from the journal abstract).

J Child Psychol Psychiatry Allied Discip. 2008;49:950-57.
Cognitive functioning in affected sibling pairs with ADHD: Familial clustering and dopamine genes.
Loo SK, Rich EC, Ishii J, et al.
Background: This paper examines familiality and candidate gene associations of cognitive measures as potential endophenotypes in attention-deficit/ hyperactivity disorder (ADHD).
Methods: The sample consists of 540 participants, aged 6 to 18, who were diagnosed with ADHD from 251 families recruited for a larger genetic study of ADHD. All members of the family underwent psychiatric interviews and children were administered a large battery of cognitive tasks. Subjects were genotyped for several dopaminergic candidate genes (DAT1, DRD4, and DRD5).
Results: Performance on measures of intelligence, working memory, and set-shifting had the highest sibling correlations and exhibited significant familial clustering. The 7-repeat allele of the dopamine receptor D4 (DRD4) gene was associated with poor performance on measures of intelligence, color naming, interference control, and working memory. There were no significant associations with DAT1 and DRD5.
Conclusions: Sibling correlations, familial clustering and candidate gene associations provide strong support for verbal working memory as a candidate endophenotype for ADHD. More complex models of, and larger sample sizes for, genetic association with cognitive functions are encouraged for future study.
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Child Psychiatry & Human Development. 2008 Sep;39:273-82.
Objective versus subjective assessment of methylphenidate response.
Manor I, Meidad S, Zalsman G, et al.
Subjective improvement-assessment in attention deficit/hyperactivity disorder (ADHD), following a single dose of methylphenidate (MPH) was compared to performance on the Test-of-Variables-of-Attention (TOVA). Self-perception was assessed with the clinical-global-impression-of-change (CGI-C). Participants included 165 ADHD subjects (M:F ratio 67%:33%) aged 5-18 (11.09 Â± 3.43) years. TOVA was administered before and after MPH challenge (0.3 mg/kg). Self-perception CGI-C scores were compared to the TOVA scores. An inverse correlation was found only between CGI-C and the TOVA-Commission-scores (r=-0.326, p<0.001). We thus conclude that subjective reports are too unreliable to be used in order to assess MPH benefit in ADHD pediatric populations.
(PsycINFO Database Record (c) 2008 APA, all rights reserved) (from the journal abstract).

Chin J Contemp Pediatr. 2008;10:471-74.
Effectiveness of oral osmotic-methylphenidate in treatment of attention deficit hyperactivity disorder in children.
Pan XX, Ma HW, Wan B, et al.
Objective: Methylphenidate is recommended as a first-line modality for treating attention deficit hyperactivity disorder (ADHD). In the past, immediate release methylphenidate (IR-MPH) was used for ADHD. Now oral osmotic-methylphenidate (OROS-MPH) is used for ADHD in China. This study was designed to investigate the efficacy and safety of OROS-MPH for treatment of ADHD in children.
Methods: Ninety-nine children with ADHD were randomly administered with OROS-MPH (18 mg/time, once daily) and IR-MPH (5 mg/time, twice or three times per day). After 6 weeks of treatment, the therapeutic effects were evaluated by the SNAP-IV and the IVA-CPT.
Results: Fifty patients completed the 6-week treatment. The effective rate (83.3% vs 75%) and the complete remission rate (44% vs 25%) in the OROS-MPH treatment group were higher than that in the IR-MPH treatment group. There were statistically significant differences in the SNAP-IV and IVA-CPT scores before and after treatment in the two groups ($P < 0.01$). The two groups had a similar incidence of side effects during treatment.
Conclusions: OROS-MPH for the treatment of ADHD is effective and safe in children, and its once-daily administration is more convenient.

Rev Neurol. 2008;47:129-33.
Hand and finger anomalous developmental coordination to write in children with attention deficit/hyperactivity syndrome.
Pascual-Castroviejo I, Lobo-Llorente A.
Aim. To present a developmental coordination disorder in children with attention deficit/hyperactivity syndrome (ADHS) characterized by anomalous handwriting posture of hands and fingers. Patients and methods. Forty-five children who presented with ADHS were studied (39 males and 6 females) with ages ranging from 6 to 16 years (average 10.8 years) and an analysis of the position of the hands and fingers during handwriting was made within the context of a complete neurological evaluation.
Results. Only 2 of the 6 hyperactive patients showed a discrete anomalous posture of the fingers, with normality in the other four patients. Seventeen of the 25 children (68%) with ADHS combined type showed poor posture of the fingers when writing. Among the 14 children with ADHS attention deficit type, 8 had abnormal posture when using a pencil, and 4 had shown the problem several years before consulting, and the problem had disappeared after local orthopedic treatment. All 4 left-handed children (3 females and 1 male) presented abnormal posture of the fingers when writing.
Conclusions. Evaluation of the anomalous posture of the fingers when writing of patients with ADHS is a test that we commonly use because it is easy to do, the patients collaborate very well to do it and uncovers very early the developmental coordination disorder. The anomalous posture is associated with other coordination disorders and problems of muscular tone such as splay-foot, genu recurvatum, problems with jumping, walking on one foot, etc. in most patients.

Rev Neurol. 2008;47:175-84.
Behavioural and neuropsychological characteristics of children of both sexes, between 6 and 11 years of age, with attention deficit.
Puentes-Rozo PJ, Barcelo-Martinez E, Pineda DA.
Introduction. Attention deficit hyperactivity disorder (ADHD) gives rise to behavioural and neuropsychological alterations. Aims. The purpose of this study is to compare the behavioural and neuropsychological skills of 6 to 11-year-old children of both sexes, who have been diagnosed with ADHD, with that of a control group.
Subjects and methods. From a total of 1200 schoolchildren, whose parents and teachers answered a brief ADHD screening survey, we selected 112 participants who were then submitted to a psychological clinical interview and a neurological examination in order to assign them to one of three groups: combined-type ADHD, inattentive ADHD and a control group. Behaviour was assessed by applying the Conners' Rating Scales and the multidimensional behaviour survey. Cognitive capacities were assessed by applying a neuropsychological battery for attention, memory, visuomotor and verbal skills, and executive functions. Groups were compared by means of a Kruskal-Wallis non-parametric univariate analysis of variance. In the case of pairs of groups, the Mann-Whitney U test was employed.
Results. The behavioural scales showed greater alterations in the case groups, with more problems in the combined-type ADHD group. Neuropsychologically, significantly lower performances were observed in the ADHD groups in sustained attention, executive function, semantic and phonological fluency tests.
Conclusions. Behavioural disorders are the most apparent in ADHD. The neuropsychological alterations that were found were similar to those reported in other studies conducted in Colombia.

Nord J Psychiatry. 2008;62:315-21.
Nicotine and alcohol use in adolescent psychiatric inpatients: Associations with diagnoses, psychosocial factors, gender and age.
Ribeiro SN, Jennen-Steinmetz C, Schmidt MH, et al.
The aim of the survey was to describe the proportion of smokers and alcohol users in a group of children and adolescents admitted to a German department of child and adolescent psychiatry and psychotherapy. In addition, the proportion of smokers in this group of patients was compared with the proportion in the general population of the same age. The sample was composed of all children and adolescent inpatients (n=432, 8-17years old meeting inclusion criteria) admitted to a German department of child and adolescent psychiatry between May 2001 and June 2003. A shortened adaptation of the questionnaire on legal and illegal drug use, developed by the Swiss Professional Service for Alcohol Problems, Lausanne, was used. Initiation, frequency and quantity of drug use, and parental substance use were assessed. The results showed an association between conduct disorder (CD) and attention-deficit/ hyperactivity disorder (ADHD) and an early initiation of nicotine and alcohol use. Girls and boys with CD and ADHD were significantly more likely to be

involved in higher levels of nicotine use compared with the general population. Parental nicotine use was associated with smoking in girls, while maternal nicotine use was associated with smoking in boys. Furthermore, regular alcohol use in both girls and boys was associated with nicotine use. To conclude, early initiation and elevated rates of nicotine and alcohol use are a particular risk for adolescents with CD and ADHD.

J Child Psychol Psychiatry Allied Discip. 2008;49:967-76.

Fetal origins of child non-right-handedness and mental health.

Rodriguez A, Waldenstrom U.

Background: Environmental risk during fetal development for non-right-handedness, an index of brain asymmetry, and its relevance for child mental health is not fully understood.

Methods: A Swedish population-based prospective pregnancy-offspring cohort was followed-up when children were five years old (N = 1714). Prenatal environmental risk exposures were the number of ultrasound examinations and maternal distress during pregnancy. Child mental health, including symptoms of attention deficit hyperactivity disorder (ADHD), language difficulties, and care-seeking for child behavior problems, was assessed via maternal and/or kindergarten teacher's ratings.

Results: Prenatal exposure to maternal depressive symptoms and critical life events were associated with increased risk of child non-right-handedness and mixed handedness, after adjustment for parity, maternal age, birth outcomes, infant sex, and parental handedness. No association was found between handedness and number of ultrasound examinations. Non-right and mixed-handedness, rather than left-handedness, were associated with increased risk of language difficulties and particularly with ADHD symptoms, after adjustment for current parental ADHD symptoms, current maternal depressive symptoms, birth outcomes, smoking during pregnancy, depressive symptoms and critical life events. Problems were significant enough to prompt mothers to seek care for children's behavioral problems, and parents were more likely to have received advice from the children's kindergarten teachers to seek care.

Conclusions: This study suggests that mixed-handedness, i.e., reflecting atypical brain laterality, can be a marker of both severity of prenatal exposure to maternal distress and of increased risk of ADHD symptoms in childhood. Our results support the idea that the fetal environment plays a role in subsequent child mental health.

J Child Psychol Psychiatry Allied Discip. 2008;49:924-32.

Does self-directed and web-based support for parents enhance the effects of viewing a reality television series based on the Triple P - Positive Parenting Programme?

Sanders M, Calam R, Durand M, et al.

Background: This study investigated whether providing self-directed and web-based support for parents enhanced the effects of viewing a reality television series based on the Triple P - Positive Parenting Programme.

Method: Parents with a child aged 2 to 9 (N = 454) were randomly assigned to either a standard or enhanced intervention condition. In the standard television alone viewing condition, parents watched the six-episode weekly television series, 'Driving Mum and Dad Mad'. Parents in the enhanced television viewing condition received a self-help workbook, extra web support involving downloadable parenting tip sheets, audio and video streaming of positive parenting messages and email support, in addition to viewing the television series.

Results: Parents in both conditions reported significant improvements in their child's disruptive behaviour and improvements in dysfunctional parenting practices. Effects were greater for the enhanced condition as seen on the ECBI, two of the three parenting indicators and overall programme satisfaction. However, no significant differences were seen on other measures, including parent affect indicators. The level of improvement was related to number of episodes watched, with greatest changes occurring in families who watched each episode. Improvements achieved at post-intervention by parents in both groups were maintained at six-month follow-up. Online tip sheets were frequently accessed; uptake of web-based resources was highest early in the series.

Conclusions: The value of combining self-help approaches, technology and media as part of a comprehensive public health approach to providing parenting support is discussed.

Psychiatry Clin Neurosci. 2008;62:479-81.
Pervasive developmental disorder with attention deficit hyperactivity disorder-like symptoms and mismatch negativity.
Sawada M, Negoro H, Iida J, et al.
The present study examined the correlation between the attention deficit hyperactivity disorder (ADHD) Rating Scale-IV Japanese version (ADHD RS-IV-J) score and mismatch negativity (MMN), in 10 pervasive developmental disorder (PDD) children with ADHD-like symptoms, and examined whether MMN become the objective measure to assess the severity of ADHD-like symptoms in PDD children. Consequently, score of ADHD RS-IV-J had a positive correlative tendency with MMN latency and had a significant strong negative correlation with MMN amplitude. Therefore, MMN may become an objective measure to assess the severity of ADHD-like symptoms in PDD children.

Eur Child Adolesc Psychiatry. 2007;16:430-38.
Who cares for patients with attention-deficit/hyperactivity disorder (ADHD)? Insights from Nordbaden (Germany) on administrative prevalence and physician involvement in health care provision.
Schlander M, Schwarz O, Trott GE, et al.
Objective: To determine age and gender specific administrative prevalence of ADHD (hyperkinetic disorder, HKD, and hyperkinetic conduct disorder, HKCD, according to ICD-10-based coding) in Germany in 2003, and to assess physician involvement in medical care.
Method: Retrospective claims database analysis covering the insured population of Nordbaden, Germany (n = 2.238 million).
Results: A total of 11,875 subjects with a diagnosis of HKD/HKCD were identified (overall 12-month prevalence rate 0.53%). Prevalence was highest among children age 7-12 years (5.0%; boys, 7.2%; girls, 2.7%). Among adults age 20 years and higher, prevalence was 0.04% (males, 0.04%; females, 0.03%). 36.0% (13.0%) of children and adolescents and 33.5% (12.5%) of adults with a diagnosis of ADHD were seen by a specialized physician at least once (four times) during the year. Physician involvement by discipline was highly skewed.
Conclusion: Diagnosis rates in children and adolescents exceeded those expected according to ICD-10 criteria, but matched DSM-IV-based estimates. In the adult population, ADHD was rarely detected. Most patients were not seen by a mental health specialist, and physician involvement was highly concentrated. Potential policy implications include a high need for expertise among pediatricians and general practitioners. The data indicate an urgent need for further research into health care utilization and quality.

Am J Psychoanal. 2008;68:276-94.
Successful child psychotherapy of attention deficit/hyperactive disorder: An agitated depression explanation.
Seitler BN.
Science tries to explain phenomena in ways that are demonstrable and replicable to develop logical, coherent, parsimonious, and predictive theoretical systems. Yet hyperactive children are given stimulants to "calm" them down, despite the fact that science would predict stimulants would increase hyperactivity. Bradley (1937, 1950) observed that half of the behavior-problem children to whom he administered a stimulant for one week became subdued. He called this finding paradoxical, speculating that inhibitory centers of the central nervous system were stimulated. While Bradley's assertion of a paradoxical reverse effect in children may be an empirical observation, it is not an explanation. The Attention Deficit/Hyperactive Disorder (ADHD) is inferred to exist from hyperactive behavior, which in turn, is inferred to be neurological in origin, a circular argument. An inevitable consequence of the belief in the hypothetical neurological etiology of ADHD is that children are typically given stimulants. Using the case of a seven-year old child, described as experiencing ADHD, who was treated successfully without medication as an illustration, the author provides an alternative, more parsimonious explanation of the etiology, suggesting that ADHD is related to agitated depression.

Acta Neuropsychiatr. 2008;20:207-15.
Attention profiles in autistic children with and without comorbid hyperactivity and attention problems.
Sinzig J, Bruning N, Morsch D, et al.
Objective: Psychopathological, neuropsychological and genetic findings indicate an association between ASD Spectrum Disorder (ASD) and attention-deficit/hyperactivity disorder (ADHD). The goal of this study was to compare the neuropsychological profiles of attention functions in children with ADHD and with ASD and without comorbid ADHD. The hypothesis was that either ADHD and autistic children with comorbid ADHD symptoms were more impaired in inhibition and sustained attention performance and that all individuals with ASD show more deficits in divided attention.
Method: Children aged 6 to 18 years old with ADHD (n = 30) or ASD with (n = 21) and without comorbid ADHD (n = 20) and 30 healthy children were included consecutively. Psychopathology was evaluated using the KIDDIE-SADS and symptom checklists for ADHD and ASD according to DSM-IV. Assessed neuropsychological functioning included inhibition, sustained as well as divided attention and alertness tasks.
Results: Age and IQ-corrected z-scores were used. Statistically significant group effects were found for the variables sustained attention median (F = 3.2, =.02), hits (F = 3.3, p =.02) and false alarms (F = 3.9, p =.01), divided attention hits (F = 3.3, p =.02), errors (F = 3.1, p =.03) and false alarms (F = 3.3, p =.03) and alertness false alarms (F = 2.9, p =.04). Pearson Correlations revealed associations between ADHD symptoms and sustained attention in the ADHD group and between ADHD symptoms and inhibition in the ASD+ group.
Conclusion: Our hypothesis was partly confirmed as ADHD children showed more deficits in sustained attention and ASD children in divided attention tasks. However there was no evidence that children with ASD and comorbid ADHD symptoms have a specific profile in comparison to pure ASD children.

J Child Psychol Psychiatry Allied Discip. 2008;49:977-85.
Reduced activation in right lateral prefrontal cortex and anterior cingulate gyrus in medication-naive adolescents with attention deficit hyperactivity disorder during time discrimination.
Smith AB, Taylor E, Brammer M, et al.
Background: Patients with attention deficit hyperactivity disorder (ADHD) under-perform when discriminating between durations differing by several hundred milliseconds. This function involves right prefrontal and anterior cingulate (AC) brain regions, which are structurally and functionally compromised in this patient group during executive tasks. We investigated the neuro-anatomical substrates mediating fine temporal discrimination in adolescents with ADHD compared with controls, using functional magnetic resonance imaging (fMRI).
Methods: Twenty-one male medication-naive adolescents aged 10-15 years with a DSM-IV diagnosis of ADHD (combined subtype) and without comorbid Axis I disorders (except conduct disorder) were compared to a group of 17 age- and IQ-matched healthy adolescents. Using fMRI on a 1.5T scanner, we compared brain activation and performance between adolescents with ADHD and controls during a time discrimination task contrasted with a temporal order task.
Results: Despite comparable performance, patients with ADHD showed decreased activation in right dorsolateral and inferior prefrontal cortex and AC during time discrimination compared with controls.
Conclusions: Right hemispheric fronto-cingulate abnormalities in ADHD, previously observed during inhibitory and executive functions, are also associated with temporal perception. Furthermore, recruitment of medication-naive patients precludes the possibility that deficits are attributable to stimulant exposure.

Behav Res Ther. 2008;46:983-92.
Treatment effectiveness of combined medication/behavioural treatment with chinese ADHD children in routine practice.
So CYC, Leung PWL, Hung SF.
Background: The effectiveness of a combined methylphenidate/behavioural treatment (BT) versus methylphenidate-only for Chinese children with Attention-Deficit/Hyperactivity Disorder (ADHD) was tested in routine clinical practice in Hong Kong.
Methods: A randomized group comparison design was adopted with two treatment conditions (methylphenidate-only; methylphenidate/BT), which lasted for 6 months. There were four assessment time points (pre-treatment, post-treatment, and 6-month and 12-month follow-ups), using the Strengths and Weaknesses of ADHD Symptoms and Normal Behaviours (SWAN) Rating Scale. Parental attitude toward

different treatment options of ADHD was also assessed at pre-treatment and post-treatment. Participants included 90 Chinese ADHD children (mean age = 8 years, SD = .95).
Results: The combination of BT and a low-dose methylphenidate was significantly more effective than methylphenidate-only in reducing ADHD and ODD symptoms at post-treatment. At follow-ups, the benefits of the combined treatment were maintained, while the methylphenidate-only group caught up in improvement in ADHD symptoms. Parents in both treatment conditions showed improved attitude toward medication after the 6-month treatment phase, while their attitude toward BT was positive all along.
Conclusions: This study supported the added benefits of BT, on top of medication, for Chinese ADHD children in routine practice with treatments conducted by regular medical and paramedical staffs.

Clin Case Stud. 2008;7:359-76.
Utilizing neuropsychological testing to inform ADHD diagnosis and treatment: The case of Phil.
Sugalski TD, Scott AJ, Cleary MJ.
This article describes a case study in which a 7-year-old first grade boy (Phil) underwent neuropsychological assessment to determine the possible existence of attention deficit hyperactivity disorder. Subsequent performances on tests of attention and executive functioning were quite variable. Specifically, there were indicators of inattention, erratic response style, and executive dysfunction evidenced by a large number of commission errors. In addition, there were difficulties maintaining attentional focus in the presence of distracters, weaknesses in working memory, information processing speed, and difficulties with planning and inhibition. Treatment implications are subsequently described, particularly the growing use of computer-assisted cognitive training to address working memory and executive functioning. Finally, the article concludes with a discussion about how to employ neuropsychological results in an effort to meaningfully engage the family of an attention deficit hyperactivity disorder child in long-term therapy.

Psychiatry (GBR). 2008;7:340-44.
Attention deficit hyperactivity disorder.
Thapar A, Munoz-Solomando A.
Attention deficit hyperactivity disorder (ADHD) is a childhood-onset neurodevelopmental condition characterized by severe, impairing inattention, impulsiveness, and hyperactivity. It is commonly accompanied by comorbid disorders and learning difficulties. ADHD is a common problem and affects boys more than girls. The aetiology remains unknown but genetic factors are known to contribute. Non-inherited influences are also important. There has been interest in the role of exposure to prenatal adversity and later environmental risk. Although many risk factors have been associated with ADHD, none has convincingly been shown to be causal. Careful assessment is required to make a diagnosis of ADHD. Parents and the child need to be seen and it is essential that information is gathered from the school. It is currently recommended that a multimodal treatment package is used in the management of ADHD; this should include medication, home-based and school-based interventions and support. Longitudinal studies show that ADHD can persist into adult life and lead to other adverse outcomes including criminality, drug use, and social difficulties. This review provides an overview on ADHD for trainee clinicians.

J Child Psychol Psychiatry Allied Discip. 2008;49:942-49.
Poor utility of the age of onset criterion for DSM-IV attention deficit/hyperactivity disorder: Recommendations for DSM-V and ICD-11.
Todd RD, Huang H, Henderson CA.
Background: To test whether the retrospective reporting of the age of onset impairment criterion for attention deficit/hyperactivity disorder (ADHD) required in the Diagnostic and Statistical Manual of Mental Disorders - IV (DSM-IV) complicates identification of new and known child and adolescent cases later in life.
Methods: A birth-records-based cohort of twins assessed at ages 7 to 19 years were blindly reassessed five years later using the MAGIC interview. Study outcome measures were differences in reported ages of onset for attention deficit/hyperactivity disorder (ADHD), oppositional defiant disorder (ODD), conduct disorder (CD) and major depressive disorder (MDD).
Results: For all age groups and respondents (parent on youth or youth self-report), later ages of ADHD onset were reported five years later. The same phenomenon was also present for the other diagnostic groups. Of the initial ADHD individuals who continued to meet all other ADHD criteria at follow-up, 46% failed

the age of onset criterion five years later. When ignoring the age of onset criterion, late onsets of ages 7-16 years accounted for about 10% of all ADHD.
Conclusions: Use of the DSM-IV age of onset criterion for attention deficit/hyperactivity disorder in the assessment of adolescents and young adults results in under-identification of affected individuals. Consideration should be given to revising the current nomenclatures to reflect the reality of retrospective reporting errors in age of onset as well as the presence of late onset cases.

Psychiatry Res Neuroimaging. 2008;163:270-78.
Differential abnormalities of the head and body of the caudate nucleus in attention deficit-hyperactivity disorder.
Tremols V, Bielsa A, Soliva JC, et al.
The aim of the study is to present a new method for the segmentation of the caudate nucleus and use it to compare the caudate heads and bodies of an attention deficit-hyperactivity disorder (ADHD) group with those of a control group. We used a 1.5-T system to acquire magnetic resonance brain scans from 39 children with ADHD, as defined by DSM-IV TR, and 39 age, handedness and IQ matched controls. The new method for caudate head and body segmentation was applied to obtain semi-automatic volumes and asymmetric patterns. Bilateral volumetric measures of the head, body, and head-body of the caudate nuclei were compared within groups and between ADHD and control groups. Although the group factor was not significant, there were first and second order interactions. The analysis of simple effects showed that the right body and right head+body of the ADHD group was significantly smaller than in the control group, although the ADHD right caudate head was bigger. No ADHD within-group caudate differences were found. Controls showed a significantly larger left caudate head and a significantly bigger caudate right body and right head+body. Our new method for segmenting the caudate nucleus detected differential abnormalities of the right caudate head and body in the ADHD group, explaining previous heterogeneous findings in the literature.

Clin Neuropsychol. 2008;22:826-41.
Process examination of executive function in ADHD: Sex and subtype effects.
Wodka EL, Mostofsky SH, Prahme C, et al.
To examine effects of group (Attention-Deficit/Hyperactivity Disorder [ADHD] versus Typically Developing [TD]), sex, and ADHD subtype on "process/optional" measures of executive functioning, children (n = 123; 54 ADHD, 69 TD) aged 8-16 completed subtests from the D-KEFS. No group, sex, or ADHD subtype effects were found on optional measures from the Trail Making, Color-Word Interference, and Tower tests. A significant interaction was found for Verbal Fluency Total Repetition Errors; boys with Combined/ Hyperactive-Impulsive (ADHD-C/HI) type ADHD performed better than ADHD-C/HI girls, whereas girls with Inattentive type ADHD (ADHD-I) performed better than ADHD-I boys. Overall, children with ADHD did not differ from TD on most optional measures from the D-KEFS. When sex and ADHD subtype were considered, children with the subtype of ADHD less common for sex were at greater risk for poorer performance.

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