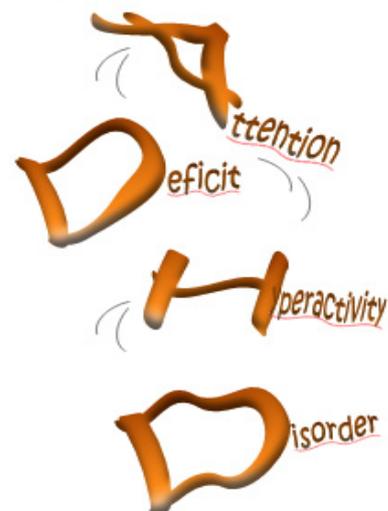


# NEWSLETTER



## INDICE:

1. Bibliografia articoli ADHD pag. 2
2. Segnalazioni
  - Elenco delle sperimentazioni cliniche contenute nei Registri **internazionale** (clinicaltrials.gov – U.S. National Institutes of Health) e **nazionale** (Osservatorio Nazionale sulla Sperimentazione Clinica dei Medicinali). pag. 29
  - Convegno dell'Ufficio Formazione Permanente e A.O. Salvini **“La valutazione del temperamento in età scolare e prescolare secondo il modello di Cloninger”** 15-24 giugno 2011; Garbagnate Milanese (MI). pag. 31
  - VIII Congresso Nazionale AIDAI – AIRIPA sul **“Disturbo da deficit di attenzione/iperattività”** 16-17 settembre 2011, Pescara. pag. 32

## **BIBIOGRAFIA ADHD APRILE 2011**

Arq Neuro-Psiquiatr. 2007;65:1078-83.

**PREVALENCE OF ATTENTION DEFICIT HYPERACTIVITY DISORDER AND ITS COMORBIDITIES IN A SAMPLE OF SCHOOL-AGED CHILDREN.**

**Pastura G, Mattos P, Araujo APDQ.**

Attention deficit hyperactivity disorder (ADHD) is a frequent condition in school-age children and commonly presents in comorbidity with other psychiatric diseases. In Brazil, there are few studies concerning non-clinical samples. Purpose: The present study aims to calculate the prevalence of this disorder and its comorbidities in a sample of school-age children. Method: Cross-sectional analytic study was conducted on a non-clinical sample of children and adolescents registered in 2003 in the elementary school of the Federal University of Rio de Janeiro. A screening questionnaire was used and parents of those possible affected children were invited for a clinical structured interview. Results: The prevalence of ADHD was 8.6%. Comorbidities were present in 58% of the cases and oppositional-defiant disorder was the most common, found in 38.5%. Conclusions: The prevalence of the ADHD and its comorbidities in this sample is similar to that observed in the literature.

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Aust New Zealand J Psychiatry. 2007;41:998-1004.

**HEALTH-RELATED QUALITY OF LIFE IN METHYLPHENIDATE-TRATED CHILDREN WITH ATTENTION-DEFICIT-HYPERACTIVITY DISORDER: RESULTS FROM A TAIWANESE SAMPLE.**

**Yang P, Hsu HY, Chiou SS, et al.**

**Objective:** Attention-deficit-hyperactivity disorder (ADHD) is the most common neuropsychiatric disorder of childhood. The purpose of the present study was to assess the health-related quality of life (HRQL) in methylphenidate-treated school-age children with ADHD as compared with healthy children in a Taiwanese population.

**Methods:** Subjects were 6-15 years of age with ADHD who were currently receiving methylphenidate treatment (total n = 119). Subjects were compared to 129 healthy children recruited from the community. Child Health Questionnaire Parent Form-50 (CHQ-PF-50), a functional health status measure of HRQL was arranged for parents to complete. Disease-related variables were analysed to determine their relationship and predictive power with HRQL of children.

**Results:** The HRQL of methylphenidate-treated children with ADHD was rated worse than that of community children in all the psychosocial subscales and the Psychosocial Summary Score of CHQ-PF-50. In addition, the problems of ADHD children interfered with family activities and family cohesion significantly. Moreover, improvement of ADHD core symptoms after medication treatment predicted higher psychosocial functioning. This effect was independent of children's current age, age receiving diagnosis, age starting and duration of medication treatment but was not independent of ADHD comorbidity.

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

**Conclusion:** This study may serve as one of the cross-cultural validations of ADHD as a common concern for children and families worldwide. After methylphenidate treatment, parents of Taiwanese children with ADHD still reported them to have poorer health outcomes than control children across almost all domains of HRQL. Improvement of HRQL should be integrated in the overall treatment plan for children with ADHD.

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Brain Injury. 2011 Apr;25:409-15.

**A PILOT STUDY EVALUATING AN ABBREVIATED VERSION OF THE COGNITIVE REMEDIATION PROGRAMME FOR YOUTH WITH NEUROCOGNITIVE DEFICITS.**

**Luton LM, Reed-Knight B, Loiselle K, et al.**

**Primary objective:** To determine the effectiveness of an abbreviated version of an established cognitive remediation programme for children with neurological disorders and attention problems in an outpatient setting.

**Methods and procedures:** Eighteen 6–15-year-old children diagnosed with neurological and attention difficulties completed a six-module training programme aimed at improving attention. This programme was a shorter version of the Cognitive Remediation Programme (CRP), which has been successfully implemented with children with neurocognitive deficits. Parents completed measures of their children's attention and children completed neuropsychological measures of attention.

**Main outcomes and results:** The programme was associated with improvement in several aspects of parent-reported attention and children's performance on tasks measuring attention.

**Conclusions:** The shortened version of the CRP shows promise as a brief treatment for attention problems in outpatient neurological populations. Future research should assess programme effectiveness using a control group, longer-term followup and teacher reports.

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Child Care Health Dev. 2008;34:111-20.

**CHILDREN'S AND PARENTS' PERSPECTIVES ON OPEN-LABEL USE OF PLACEBOS IN THE TREATMENT OF ADHD.**

**Sandler A, Glesne C, Geller G.**

**Background:** The purpose of this study was to examine the efficacy and acceptability of an open-label conditioned placebo dose reduction (CPDR) treatment in 70 children with attention deficit hyperactivity disorder (ADHD). This paper focuses on the qualitative data from the study.

**Methods:** Following a double-blind, crossover dose finding procedure to determine each subject's optimal dose of stimulant medication, subjects were randomized to the CPDR treatment or one of two control groups. Outcome measures included parent and teacher ratings of ADHD behaviours and stimulant side effects. Qualitative assessments were based on open-ended interviews of children and parents. Positive responders to CPDR and controls were followed for 3 months to assess persistence of treatment benefits.

**Results:** Children randomized to CPDR showed an excellent treatment response, well maintained over time. Parents and children were generally accepting of the treatment. Most parents reported treatment benefits and 80% of the children found the placebo to be useful. Full disclosure of the placebo to parents and children did not appear to negate the placebo's effectiveness. Participation effects and changes in caregiver behaviour may have contributed to positive treatment outcomes. **Conclusions:** Open-label use of placebos as part of CPDR treatment may represent an innovative, ethical way of harnessing the power of placebos in clinical therapeutics.

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Cochrane Database Syst Rev. 2011;4:CD007990.

**PHARMACOLOGICAL TREATMENT FOR ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) IN CHILDREN WITH COMORBID TIC DISORDERS.**

*Pringsheim T, Steeves T.*

**BACKGROUND:** Attention Deficit Hyperactivity Disorder (ADHD) is the most prevalent of the comorbid psychiatric disorders that complicate tic disorders. Medications commonly used to treat ADHD symptoms include the stimulants methylphenidate and amphetamine; nonstimulants, such as atomoxetine; tricyclic antidepressants; and alpha agonists. Due to the impact of ADHD symptoms on the child with tic disorder, treatment of ADHD is often of greater priority than the medical management of tics. However, for many decades clinicians have been reluctant to use stimulants to treat children with ADHD and tics for fear of worsening their tics.

**OBJECTIVES:** To assess the effects of pharmacological treatments for ADHD on ADHD symptoms and tic severity in children with ADHD and comorbid tic disorders.

**SEARCH STRATEGY:** We searched CENTRAL (The Cochrane Library 2009, Issue 4), MEDLINE (1950 to July 2009), EMBASE (1980 to July 2009), CINAHL (1982 to July 2009), PsycINFO (1806 to July Week 4 2009) and BIOSIS Previews (1985 to July 2009). Dissertation Abstracts (searched via Dissertaation Express), and the metaRegister of Controlled Trials were searched (30 July 2009).

**SELECTION CRITERIA:** We included randomized, double-blind, controlled trials of any pharmacological treatment for ADHD used specifically in children with comorbid tic disorders. We included both parallel group and cross-over study designs.

**DATA COLLECTION AND ANALYSIS:** Two authors independently extracted data using standardized forms. **MAIN RESULTS:** We included a total of eight randomized controlled studies in the review but were unable to combine any of these in meta-analysis. Several of the trials assessed multiple agents. Medications assessed included methylphenidate, clonidine, desipramine, dextroamphetamine, guanfacine, atomoxetine, and deprenyl. All treatments, with the exception of deprenyl, were efficacious in treating symptoms of ADHD. Tic symptoms improved in children treated with guanfacine, desipramine, methylphenidate, clonidine, and the combination of methylphenidate and clonidine. Fear of worsening tics limited dose increases of methylphenidate in one study. High dose dextroamphetamine appeared to worsen tics in one study, although the length of this study was limited.

**AUTHORS' CONCLUSIONS:** Methylphenidate, clonidine, guanfacine, desipramine and atomoxetine appear to reduce ADHD symptoms in children with tics. Although stimulants have not been shown to worsen tics in most people with tic disorders, they may nonetheless exacerbate tics in individual cases. In these instances, treatment with alpha agonists or atomoxetine may be an alternative. Although there is evidence that desipramine is effective for both tics and ADHD in children, safety concerns will likely continue to limit its use in this population.

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Cochrane Database Syst Rev. 2011;4:CD007839.

**ACUPUNCTURE FOR ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) IN CHILDREN AND ADOLESCENTS.**

*Li S, Yu B, Zhou D, et al.*

**BACKGROUND:** Attention Deficit Hyperactivity Disorder (ADHD) is a common childhood psychiatric disorder with features of inattention, hyperactivity and impulsivity. There is increasing interest in complementary and alternative therapies such as acupuncture; however, it remains unclear whether the use of acupuncture in children and adolescents with ADHD is supported by the existing evidence.

**OBJECTIVES:** To assess the efficacy and safety of acupuncture as a treatment for ADHD in children and adolescents.

**SEARCH STRATEGY:** We searched CENTRAL (The Cochrane Library 2010, Issue 2); MEDLINE (21 May 2010); CINAHL (21 May 2010); EMBASE (21 May 2010); ERIC (21 May 2010); PsycINFO (21 May 2010), Chinese Biological Medicine Database (10 May 2010); Chinese Scientific Periodical Database of VIP INFORMATION (10 May 2010); China Periodical in China National Knowledge Infrastructure (10 May 2010); and Chinese Evidence-Based Medicine Database (10 May 2010). We handsearched Chinese language journals and conference proceedings.

**SELECTION CRITERIA:** Randomised controlled trials and quasi-randomised controlled trials comparing acupuncture with placebo or sham acupuncture, or conventional treatment. Participants under the age of 18 years with any type of ADHD were included. Papers in any language were included.

**DATA COLLECTION AND ANALYSIS:** Two review authors (S Li, B Yu) independently determined the studies to be included in the review based on inclusion and exclusion criteria and extracted the data using pre-developed extraction forms. The risk of bias within the trials was assessed by the same review authors in relation to allocation concealment, blinding and withdrawals. The measures of ADHD outcomes were extracted from core symptoms rating scales and additional secondary outcomes were considered.

**MAIN RESULTS:** No studies met the inclusion criteria for this review.

**AUTHORS' CONCLUSIONS:** A comprehensive search showed that there is no evidence base of randomised or quasi-randomised controlled trials to support the use of acupuncture as a treatment for ADHD in children and adolescents. Due to the lack of trials, we cannot reach any conclusions about the efficacy and safety of acupuncture for ADHD in children and adolescents. This review highlights the need for further research in this area in the form of high quality, large scale, randomised controlled trials.

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Dev Med Child Neurol. 2007;49:920-25.

**DEVELOPMENTAL COORDINATION DISORDER IN CHILDREN WITH ATTENTION-DEFICIT-HYPERACTIVITY DISORDER AND PHYSICAL THERAPY INTERVENTION.**

**Waternberg N, Waiserberg N, Zuk L, et al.**

Although physical therapy (PT) is effective in improving motor function in children with developmental coordination disorder (DCD), insufficient data are available on the impact of this intervention in children with combined attention-deficit-hyperactivity disorder (ADHD) and DCD. This prospective study aimed to establish the prevalence of DCD among a cohort of patients with ADHD, characterize the motor impairment, identify additional comorbidities, and determine the role of PT intervention on these patients. DCD was detected in 55.2% of 96 consecutive children with ADHD (81 males, 15 females), mostly among patients with the inattentive type (64.3% compared with 11% of those with the hyperactive/impulsive type,  $p < 0.05$ ). Mean age was 8 years 4 months (SD 2y). Individuals with both ADHD and DCD more often had specific learning disabilities ( $p = 0.05$ ) and expressive language deficits ( $p = 0.03$ ) than children with ADHD only. Twenty-eight patients with ADHD and DCD randomly received either intensive group PT (group A, mean age 9y 3mo, SD 2y 3mo) or no intervention (group B, mean age 9y 3mo, SD 2y 2mo). PT significantly improved motor performance (assessed by the Movement Assessment Battery for Children;  $p = 0.001$ ). In conclusion, DCD is common in children with ADHD, particularly of the inattentive type. Patients with both ADHD and DCD are more likely to exhibit specific learning disabilities and phonological (pronunciation) deficits. Intensive PT intervention has a marked impact on the motor performance of these children.

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Dev Neurorehabilitation. 2011 Apr;14:101-11.

**EXPLORING THE NEURAL MECHANISMS THAT UNDERLIE MOTOR DIFFICULTIES IN CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER.**

**Brossard-Racine M, Majnemer A, Shevell MI.**

**Background:** Attention Deficit Hyperactivity Disorder (ADHD) is the most common neurobehavioural disorder of childhood. Motor performance appears to be impaired for an important sub-set of this population. **Objectives:** This structured review draws attention to the neurological mechanisms that could potentially explain these difficulties.

**Methods:** In August 2010, Medline, PsychINFO and Embase databases were searched with keywords related to ADHD, neuroimaging modalities and motor performance.

**Results:** Four studies were retrieved that examined both motor performance and possible neural substrates. Each study explored different hypotheses and no common conclusion is emerging. The cortical activation dysregulation hypothesis, the cerebellar dysfunction hypothesis and the delayed white matter maturation hypothesis were proposed, applying combinations of motor observations and neuroimaging findings.

**Conclusion:** Published literature to date is insufficient to confirm specific hypotheses. Additional studies coupling discrete motor evaluations to neuroimaging techniques are needed in children with ADHD to better understand the neurobiological mechanisms of their motor difficulties.

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Drug Ther Bull. 2007;45:37-40.

**UPDATE ON DRUGS FOR HYPERACTIVITY IN CHILDHOOD.**

*Anon.*

In 2001, we concluded that methylphenidate or dexamfetamine can be useful adjunctive therapy for children with severe hyperactivity in whom non-drug approaches alone have been inadequate. Since then, (black down triangle)atomoxetine (pronounced a-toe-moks-e-teen; Strattera - Lilly) and three modified-release formulations of methylphenidate have been launched for attention deficit hyperactivity disorder (ADHD). Here we reconsider drugs for ADHD in childhood, focusing on the newer products.

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Emot Behav Difficulties. 2007;12:319-32.

**THE IDENTIFICATION OF CHILDREN WITH BEHAVIOURAL MANIFESTATIONS OF INATTENTION, HYPERACTIVITY AND IMPULSIVITY, IN MAINSTREAM SCHOOL: THE DEVELOPMENT OF THE SCOPE CLASSROOM OBSERVATION CHECKLIST.**

**Scope A, Empson J, McHale S, et al.**

The objective of this paper is to report the development and use of an observation checklist to identify typically developing children with behavioural manifestations associated with inattention, hyperactivity and impulsivity. This measure is termed the Scope Classroom Observation Checklist (SCOC). The SCOC was developed, assessed for reliability using an independent observer and teacher ratings, and administered to a sample of 157 mainstream schoolchildren. The SCOC revealed a normal distribution of scores on the checklist, and the top and bottom quartiles of this distribution were found, as would be expected, to differ significantly on SCOC score. The SCOC had good inter-observer reliability and a high rate of concordance with teacher ratings of attentional difficulties. The SCOC has emerged as a reliable measure that could prove to be a useful tool in a battery of screening measures to identify mainstream schoolchildren with difficulties characterised by inattention and hyperactivity-impulsivity.

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European Child & Adolescent Psychiatry. 2011 Mar;20:137-45.

**ARE FAMILY VARIABLES ASSOCIATED WITH ADHD, INATTENTIVE TYPE? A CASE–CONTROL STUDY IN SCHOOLS.**

**Pheula GF, Rohde LA, Schmitz M.**

Attention-deficit/hyperactivity disorder (ADHD) seems to be associated with significant psychosocial adversity. However, few studies assessed the role of environmental, social and interpersonal factors specifically in ADHD, inattentive type (ADHD-I). Thus, this study aims to investigate whether family environment risk factors are associated with ADHD-I. In a case–control study, we assessed a non-referred sample of 100 children and adolescents with ADHD-I and 100 non-ADHD controls (6–18 years old). They were systematically evaluated through structured diagnostic interviews. The following family adversity measures were used: Rutter's family adversity index (marital discord, low social class, large family size,

paternal criminality, maternal mental disorder), Family Environment Scale (FES) (subscores of cohesion, expressiveness and conflict) and Family Relationship Index (FRI) (based on the subscores above). After adjusting for confounding factors (social phobia and maternal history of ADHD), the odds ratio (OR) for ADHD-I increased as the number of Rutter's indicators increased. Families of children with lower FES cohesion subscores presented higher OR for ADHD-I (OR 1.24; 95% confidence interval 1.05–1.45). Lower levels of FRI, a general index of family relationship, were also related to higher risk of ADHD-I (OR 1.11; 95% confidence interval 1.03–1.21). Our findings suggest that family adversity (in general), low family cohesion and low FRI (in particular) are associated with an increase in the risk for ADHD-I. However, the cross-sectional nature of the study limits our ability to infer causality.

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Eur Child Adolesc Psychiatry. 2007;16:473-83.

#### **IMPULSIVITY IN OVERWEIGHT CHILDREN.**

**Braet C, Claus L, Verbeken S, et al.**

**Objective:** This study investigates whether or not obese children have a stronger tendency to act on impulse than normal weight children, taking into account the multidimensionality and complexity of the impulsivity construct.

**Method:** A performance based test (Matching Familiar Figure Test, MFFT), a child interview and questionnaire, and parental reports were obtained from 56 overweight children and 53 normal weight children aged 10-18 years.

**Results:** Overweight children responded in a more impulsive way on the MFFT ( $P < .01$ ). On the child questionnaire, overweight boys reported more problems with focussing attention ( $P < .05$ ) and both overweight boys and girls reported being worse at shifting their attention compared with normal weight children ( $P < .05$ ). In particular, overweight boys showed more impulsivity ( $P < .05$ ), hyperactivity ( $P < .01$ ), and inattention symptoms ( $P < .001$ ) as measured via the clinical interview. Parents of overweight children reported an equal amount of impulsivity and hyperactivity symptoms as parents of normal weight children, but scored their children lower on the Conscientiousness personality dimension ( $P < .01$ ).

**Discussion:** A subgroup of overweight children appears to have a stronger tendency to act on impulse than normal weight children, and demonstrated an impulsivity prone personality. Hence, overweight children should be screened for impulse control deficiencies. More research is needed to clear out the robustness of gender differences, the existence of a specific personality profile and possibly common underlying mechanisms of childhood obesity and Attention Deficit Hyperactivity Disorder.

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Eur Child Adolesc Psychiatry. 2007;16:505-09.

#### **PREDICTORS OF DIAGNOSTIC DELAY IN A CLINICAL SAMPLE OF FRENCH CHILDREN WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.**

**Purper-Ouakil D, Cortese S, Wohl M, et al.**

**Background:** Early recognition of attention-deficit/hyperactivity disorder (ADHD) may improve the educational and psychosocial outcome of most affected children. To date, factors associated with diagnostic delay of ADHD have not specifically been addressed. Aims of this study were to evaluate the mean diagnostic delay (time between first consultation and definite diagnosis) in a clinical sample of French children with ADHD referred to an outpatient university clinic, and to determine associated factors.

**Method:** A total of 129 consecutively referred ADHD patients aged 6-16 years. A detailed history of the children was obtained from their parents. The Kiddie-SADS-PL, the ADHD-Rating Scale, and the Clinical Global Impression Scale were used for clinical assessment.

**Results:** Mean diagnostic delay was 32.89 months. A previous suspicion of ADHD by any health care professional, therapist or teacher was significantly associated with a reduced diagnostic delay. Co-

morbidity with anxiety/depressive disorders and previous contact with a mental health professional were associated with a significant delay in diagnosis.

**Conclusion:** Delay in diagnosis of ADHD in France is among the longest reported. Children with co-morbid anxiety or depressive disorders are particularly at risk of having a significant delay in the diagnosis. Health professionals, therapists and teachers may play a relevant role to accelerate the diagnostic procedure.

Exp Clin Psychopharmacol. 2011 Apr;19:145-53.

**EFFECT OF METHYLPHENIDATE ON MOTIVATION IN CHILDREN WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.**

**Chelonis JJ, Johnson TA, Ferguson SA, et al.**

The effects of methylphenidate (MPH) on motivation were examined using a progressive ratio (PR) task in children who were prescribed MPH for the treatment of ADHD. Twenty-one children, 7 to 12 years of age, completed two test sessions, one under the effects of medication and one not. During each session, children pressed a lever to earn nickel reinforcers, where the first press resulted in a reinforcer and 10 additional presses were required for each subsequent reinforcer. Children on MPH had a significantly higher breakpoint than when off medication. This MPH-associated increase in the breakpoint manifested as a significant decrease in the interresponse times (IRT). Further, MPH administration resulted in a significant decrease in IRT variability. In contrast, MPH administration had no significant effects on the means and variability of postreinforcement pause duration. These results suggest that MPH increased motivation in children being treated for ADHD. Further, the inability of MPH to significantly reduce postreinforcement pause duration while simultaneously decreasing IRTs suggests that while MPH may increase motivation to perform an ongoing task, it may have little effect on the initiation of that task.

Journal for Specialists in Pediatric Nursing. 2011 Jan;16:39-49.

**A COMPARISON OF FAMILY ADVERSITY AND FAMILY DYSFUNCTION IN FAMILIES OF CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) AND FAMILIES OF CHILDREN WITHOUT ADHD.**

**Foley M.**

**Purpose:** This study examined the presence of family adversity and family dysfunction in 32 families who had children diagnosed with attention deficit hyperactivity disorder (ADHD) compared with 23 families with similar sociodemographic characteristics whose children did not have ADHD.

**Design and Methods:** A descriptive comparative design was used to investigate family adversity and family dysfunction.

**Results:** Families of children with ADHD had significantly higher levels of family dysfunction than families whose children did not have ADHD.

**Practice Implications:** Earlier identification and intervention with families of children who have ADHD may result in healthier family and child outcomes.

Journal of Abnormal Child Psychology: An official publication of the International Society for Research in Child and Adolescent Psychopathology. 2011 Jan;39:1-10.

**THE DOPAMINE RECEPTOR D4 GENE (DRD4) MODERATES FAMILY ENVIRONMENTAL EFFECTS ON ADHD.**

**Martel MM, Nikolas M, Jernigan K, et al.**

Attention-Deficit/Hyperactivity Disorder (ADHD) is a prime candidate for exploration of gene-by-environment interaction (i.e., G x E), particularly in relation to dopamine system genes, due to strong evidence that dopamine systems are dysregulated in the disorder. Using a G x E design, we examined whether the DRD4 promoter 120-bp tandem repeat polymorphism, previously associated with ADHD,

moderated the effects of inconsistent parenting and marital conflict on ADHD or Oppositional-Defiant Disorder (ODD). Participants were 548 children with ADHD and non-ADHD comparison children and their parents. Homozygosity for the DRD4 promoter 120-bp tandem repeat insertion allele increased vulnerability for ADHD and ODD only in the presence of inconsistent parenting and appeared to increase susceptibility to the influence of increased child self-blame for marital conflict on ADHD inattention. DRD4 genotypes may interact with these proximal family environmental risk factors by increasing the individual's responsiveness to environmental contingencies.

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Journal of Abnormal Child Psychology: An official publication of the International Society for Research in Child and Adolescent Psychopathology. 2011 Jan;39:21-32.

**THE DELINQUENCY OUTCOMES OF BOYS WITH ADHD WITH AND WITHOUT COMORBIDITY.**

**Sibley MH, Pelham WE, Molina BSG, et al.**

This study examined the association between childhood ADHD and juvenile delinquency by examining data from the Pittsburgh ADHD Longitudinal Study (PALS), a follow-up study of individuals diagnosed with ADHD in childhood (ages 5-12) and recontacted in adolescence and young adulthood for yearly follow-up (age at first follow-up interview  $M = 17.26$ ,  $SD = 3.17$ ). Participants were 288 males with childhood ADHD and 209 demographically similar males without ADHD who were recruited into the follow-up study. Delinquency information gathered yearly during the second through eighth follow-up provided a comprehensive history of juvenile delinquency for all participants. Four childhood diagnostic groups [ADHD-only ( $N = 47$ ), ADHD + ODD ( $N = 135$ ), ADHD + CD ( $N = 106$ ), and comparison ( $N = 209$ )] were used to examine group differences on delinquency outcomes. Analyses were conducted across three dimensions of delinquency (i.e., severity, age of initiation, and variety). Individuals with childhood ADHD + CD displayed significantly worse delinquency outcomes than the other three groups, across almost all indices of offending. When compared to comparison participants, boys with ADHD-only and ADHD + ODD in childhood displayed earlier ages of delinquency initiation, a greater variety of offending, and higher prevalence of severe delinquency. These findings suggest that although childhood ADHD + CD creates the greatest risk for delinquency, boys with ADHD-only and ADHD + ODD also appear at a higher risk for later offending. The patterns of offending that emerged from the PALS are discussed in the context of the relationship between ADHD, comorbidity, and delinquency.

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Journal of Abnormal Child Psychology: An official publication of the International Society for Research in Child and Adolescent Psychopathology. 2011 Jan;39:11-19.

**EXECUTIVE FUNCTIONING CHARACTERISTICS ASSOCIATED WITH ADHD COMORBIDITY IN ADOLESCENTS WITH DISRUPTIVE BEHAVIOR DISORDERS.**

**Hummer TA, Kronenberger WG, Wang Y, et al.**

The nature of executive dysfunction in youth with disruptive behavior disorders (DBD) remains unclear, despite extensive research in samples of children with attention-deficit hyperactivity disorder (ADHD). To determine the relationship between DBD, ADHD, and executive function deficits in aggressive teens, adolescents with DBD and comorbid ADHD (DBD + ADHD;  $n = 25$ ), DBD without ADHD (DBD-ADHD;  $n = 23$ ), and healthy controls (HC;  $n = 25$ ) were compared on neurocognitive tests and questionnaires measuring executive functioning. Teens with DBD + ADHD performed worse on both neurocognitive and questionnaire measures of executive function than the DBD-ADHD and HC groups. Results suggest that subgroups of DBD may exist depending on the presence or absence of comorbid ADHD, which may have implications for the selection and efficacy of treatment strategies.

J Altern Complement Med. 2007;13:1091-97.

**A COMPREHENSIVE APPROACH TO TREATING AUTISM AND ATTENTION-DEFICIT HYPERACTIVITY DISORDER: A PREPILOT STUDY.**

**Patel K, Curtis LT.**

**Objectives:** The purpose of this study was to observe the effects of a multi dimensional treatment plan involving nutrition, environmental control, chelation, and behavioral/educational/physical/speech therapy to treat children with autistic spectrum disorder and attention-deficit hyperactivity (ADHD) disorder. This study is only a preliminary study, and its small size (10 patients) precludes statistical analysis of simultaneous multiple modal treatment regimes.

**Design:** This was an open-label observational study.

**Settings/location/subjects:** This study examined 10 children aged 4-10 years old who had been diagnosed with both autistic spectrum disorder and ADHD by outside physicians or psychologists. These 10 children presented consecutively in an environmental medicine clinic in Buffalo, New York. The children were given comprehensive nutritional/environmental/chelation treatment for 3 to 6 months in addition to their usual behavioral, educational, speech, and physical therapies.

**Outcome measures:** Study outcomes were measured by objective/subjective improvement as judged by physicians/parents/teachers. Outcomes were also measured by changes in urinary heavy metal burdens over time.

**Results:** All 10 children showed significant improvement in many areas of social interaction, concentration, writing, language, and behavior. Urinary lead burden dropped significantly in all 10 children. Conclusions: Autistic spectrum disorders and ADHD are complicated conditions that probably require multidimensional treatment strategies. Larger studies are needed to determine optimum treatment plans involving nutrition, environmental control, medication, and behavioral/education/speech/physical therapies.

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Journal of Attention Disorders. 2011 Apr;15:204-14.

**LATE ADOLESCENT AND YOUNG ADULT OUTCOMES OF GIRLS DIAGNOSED WITH ADHD IN CHILDHOOD: AN EXPLORATORY INVESTIGATION.**

**Babinski DE, Pelham WE, Jr., Molina BSG, et al.**

**Objective:** To characterize the late adolescent and young adult outcomes of girls diagnosed with ADHD in childhood.

**Method:** The study included 58 women from a larger longitudinal study of ADHD. A total of 34 (M = 19.97 years old) met DSM criteria for ADHD in childhood, whereas the remaining 24 (M = 19.83 years old) did not. Self- and parent-reports of psychopathology, delinquency, interpersonal relationships, academic achievement, job performance, and substance use were collected.

**Results:** The findings suggest that girls with ADHD experience difficulties in late adolescence and young adulthood, such as more conflict with their mothers, being involved in fewer romantic relationships, and experiencing more depressive symptoms than comparison women. However, differences did not emerge in all domains, such as job performance, substance use, and self-reported ADHD symptomatology.

**Conclusion:** The findings of this study add to the literature on the negative late adolescent and young adult outcomes associated with childhood ADHD in women.

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Journal of Attention Disorders. 2011 Apr;15:193-203.

**CHILD ADHD SEVERITY AND POSITIVE AND NEGATIVE PARENTING AS PREDICTORS OF CHILD SOCIAL FUNCTIONING: EVALUATION OF THREE THEORETICAL MODELS.**

**Kaiser NM, McBurnett K, Pfiffner LJ.**

**Objective:** Prior research has established links between child social functioning and both parenting and child ADHD severity; however, research examining the way that these variables work together is lacking. The current article aims to test three possible models (main effects, mediation, and moderation) by which ADHD severity and positive and negative parenting on the part of both mothers and fathers may work together to predict child social functioning.

**Method:** In a combined sample of children ages 5 to 11 with and without ADHD (N = 143), multiple regression was used to assess: (a) the main effects of ADHD severity and of positive and negative parenting by both mothers and fathers on child social skill and aggressive behavior; (b) parenting as a potential mediator of the relation between ADHD severity and child social skill and aggressive behavior; and (c) ADHD severity as a potential moderator of the relation between parenting and child social skill and aggressive behavior dependent variables.

**Results:** Significant main effects of both ADHD severity and parenting on child social skill and aggression were found. There was some evidence to support parenting (particularly negative parenting) as a mediator of the relation between ADHD severity and child social skill and aggression. There was no evidence of significant moderational effects.

**Conclusion:** Parenting and ADHD severity are independently associated with child social skill and aggressive behavior. To the extent that these associations are causal, multimodal treatment targeting both symptom reduction and improved parenting may be especially effective for the treatment of social problems related to childhood ADHD. Furthermore, evidence for parenting as a mediator of the relation between ADHD severity and child outcomes suggests that changes in child symptoms may also improve parenting practices, thus leading to improved child outcomes.

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Journal of Attention Disorders. 2011 Apr;15:183-92.

**PREDICTORS OF ADHD PERSISTENCE IN GIRLS AT 5-YEAR FOLLOW-UP.**

**Mick E, Byrne D, Fried R, et al.**

**Objective:** The main aim of this study was to examine the age-dependent remission from ADHD in girls transitioning through childhood into adolescence and early adulthood.

**Method:** We conducted a 5-year prospective follow-up study of 123 girls with ADHD and 106 non-ADHD control girls aged between 6 and 17 years at ascertainment. ADHD was considered persistent at follow-up if participants met full diagnostic criteria for DSM-IV ADHD or met residual criteria for DSM-IV ADHD with associated impairment (Global Age Forum [GAF] score < 60).

**Results:** By age 16 years, ADHD was persistent in 71% (95% CI = 61-79%) of girls with ADHD. Participants with persistent ADHD at follow-up had more psychiatric comorbidity, behavior problems, and functional impairment than girls with ADHD in remission. Remitted ADHD, however, continued to be associated with functional impairment relative to non-ADHD controls. Persistence at 5 years was predicted by increased behavioral impairment at baseline.

**Conclusion:** This 5-year follow-up suggests that many girls with ADHD experience persistent symptoms and/or functional impairment through late adolescence and into early adulthood.

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Journal of Attention Disorders. 2011 Apr;15:235-45.

**A BRIEF DSM-IV-REFERENCED TEACHER RATING SCALE FOR MONITORING BEHAVIORAL IMPROVEMENT IN ADHD AND CO-OCCURRING SYMPTOMS.**

**Sprafkin J, Mattison RE, Gadow KD, et al.**

**Objective:** To examine the psychometric properties of the 30-item teacher's version of the Child and Adolescent Symptom Inventory Progress Monitor (CASI-PM-T), a DSM-IV-referenced rating scale for monitoring change in ADHD and co-occurring symptoms in youths receiving behavioral or pharmacological interventions.

**Method:** Three separate studies were conducted to determine (a) which items from longer diagnostic instruments were most representative of ADHD and commonly occurring psychiatric syndromes in clinic-referred samples (N = 406) aged between 3 and 18 years, (b) the reliability and validity of the CASI-PM-T in students enrolled in full-time special education programs at the elementary and middle school levels (N = 169), and (c) the clinical utility of measuring behavioral change in a sample of outpatient ADHD children beginning treatment with stimulant medication.

**Results:** Internal consistency reliabilities (.71-.94), 2-week test-retest reliabilities ( $r = .70-.90$ ), and interrater agreement ( $r = .44-.78$ ) for the CASI-PM-T symptom categories were comparable to the full-length CASI-4. Convergence was also found between corresponding CASI-PM-T categories and consultant diagnoses of ADHD and ODD as well as school functioning measures of grade-point average and suspensions. The CASI-PM-T also demonstrated sensitivity to stimulant medication treatment effects.

**Conclusion:** Findings provide preliminary support for the reliability, validity, and clinical utility of the CASI-PM-T.

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Journal of Attention Disorders. 2011 Apr;15:246-56.

**METHYLPHENIDATE AND COMORBID ANXIETY DISORDER IN CHILDREN WITH BOTH CHRONIC MULTIPLE TIC DISORDER AND ADHD.**

**Gadow KD, Nolan EE.**

**Objective:** To determine if comorbid anxiety disorder is associated with differential response to immediate release methylphenidate (MPH-IR) in children with both ADHD and chronic multiple tic disorder (CMTD).

**Method:** Children with (n = 17) and without (n = 37) diagnosed anxiety disorder (ANX) were evaluated in an 8-week, placebo-controlled trial with rating scales and laboratory measures.

**Results:** The +ANX group obtained more severe parent, teacher, and child ratings of anxiety and more severe parent ratings of depression, tics, oppositional defiant disorder (ODD), and peer aggression than the -ANX group. Treatment with short-term MPH-IR was associated with improvement in ADHD, ODD, and peer aggression in the +ANX group. When controlling for ODD severity, there were no apparent group differences in therapeutic response to MPH-IR in children  $\pm$ ANX. There was little evidence that MPH-IR contributed to improvement in anxiety or depression symptoms in the +ANX group. There was some indication that children with comorbid anxiety may differentially experience greater increase in systolic blood pressure (0.5 mg/kg of MPH-IR > placebo).

**Conclusion:** Findings suggest that the co-occurrence of diagnosed CMTD+ADHD+ANX represents a particularly troublesome clinical phenotype, at least in the home setting. Comorbid anxiety disorder was not associated with a less favorable response to MPH-IR in children with ADHD+CMTD, but replication with larger samples is warranted before firm conclusions can be drawn about potential group differences.

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J Child Neurol. 2007;22:1342-47.

**THE PREVALENCE OF ATTENTION-DEFICIT/HYPERACTIVITY DISORDER AMONG PERSONS WITH ALBINISM.**

**Kutzbach B, Summers GC, Holleschau AM, et al .**

Attention-deficit/hyperactivity disorder (ADHD) is a common diagnosis in children and adults. Human albinism is an uncommon genetic condition associated with visual impairment that may affect behavior. To determine if there is a relationship between albinism and ADHD, the prevalence of ADHD was examined among 78 children (age range, 4-18 years) and among 44 adults (age range, 19-79 years) with ocular or oculocutaneous albinism. ADHD was diagnosed in the pediatric population using a combination of Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition) criteria, Conners' Parent Rating Scale, and physician observation. Adults were diagnosed using the Utah criteria for ADHD as confirmed by physician history and interview. Seventeen children (22.7% [17 of 75]) (3 children with existing diagnoses of pervasive developmental disorder were identified but were not included in the data analysis) and 3 adults (6.8%) met the criteria for ADHD. The combined hyperactivity and impulsivity subtype of ADHD was most common, accounting for 50% of the diagnoses. Binocular best-corrected visual acuity and genetic type of albinism were not found to correlate with a diagnosis of ADHD. The prevalence of ADHD among children and adults with albinism is more frequent than that reported among the general population and is not related to binocular best-corrected visual acuity.

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J Child Neurol. 2011 Mar;26:302-08.

**BODY MASS INDEX OF CHILDREN WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.**

**Dubnov-Raz G, Perry A, Berger I.**

An association between overweight and attention-deficit/hyperactivity disorder (ADHD) in children was previously suggested. We examined the prevalence of overweight, anthropometric changes, and the effect of methylphenidate treatment in 275 children with ADHD without neurological comorbidities and in controls. Data were extracted from medical charts, for up to 17 months of follow-up. Height, weight, body mass index, and their z scores did not differ between the ADHD and control groups. Prevalence of overweight and obesity was lower in the ADHD group compared with controls (19% vs 35%,  $P = .02$ , and 7% vs 16%,  $P = .05$ , respectively). During a follow-up of up to 17 months, no significant changes in height or body mass index z scores were found, including in a subgroup of overweight children. We conclude that compared with local controls, children with ADHD have rates of overweight and obesity that are lower, but that are similar to national estimates. Methylphenidate treatment did not significantly affect height, weight, or overweight status.

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Journal of Child Psychology and Psychiatry. 2011 Mar;52:324-31.

**ATTENTIONAL FUNCTIONS IN CHILDREN AND ADOLESCENTS WITH ADHD, DEPRESSIVE DISORDERS, AND THE COMORBID CONDITION.**

**Günther T, Konrad K, De Brito SA, et al.**

**Background:** Attention-deficit hyperactivity disorder (ADHD) and depressive disorders (DDs) often co-occur in children and adolescents, but evidence on the respective influence of these disorders on attention parameters is inconsistent. This study examines the influence of DDs on ADHD in a model-oriented approach that includes selectivity and intensity attention parameters.

**Methods:** Ten- to fifteen-year-olds with ADHD ( $n = 63$ ), DDs ( $n = 61$ ), ADHD+DDs ( $n = 64$ ), and healthy controls ( $n = 64$ ) completed a battery of tests including five neuropsychological tasks (i.e., alertness, sustained attention, divided attention, go/no-go, and attentional set-shifting).

**Results:** All clinical groups showed attentional problems, especially in more complex attentional tasks and in the intensity aspects of attention. We observed the most severe attentional impairments in children with ADHD that was independent from a comorbid DD.

**Conclusion:** The clinical groups were significantly different from the healthy control group, especially in more complex attentional tasks and in the intensity aspects of attention. Some differences between ADHD, DDs and ADHD+DDs groups were detected on neuropsychological attentional performance, but the effects were not strong enough to differentiate the clinical groups from each other.

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Journal of Child Psychology and Psychiatry. 2011 Mar;52:256-64.

**DELAY DISCOUNTING OF REWARD IN ADHD: APPLICATION IN YOUNG CHILDREN.**

**Wilson VB, Mitchell SH, Musser ED, et al.**

**Background:** A key underlying process that may contribute to attention-deficit/hyperactivity disorder (ADHD) involves alterations in reward evaluation, including assessing the relative value of immediate over delayed rewards. This study examines whether children with ADHD discount the value of delayed rewards to a greater degree than typically developing children using a delay discounting task.

**Methods:** Children aged 7–9 years diagnosed with ADHD and controls completed a task in which they chose between a hypothetical \$10 available after a delay (7, 30, 90 and 180 days) versus various amounts available immediately.

**Results:** ADHD participants discounted more steeply than controls. However, this effect did not survive covarying of IQ.

**Conclusions:** ADHD is associated with a steeper delay gradient when contemplating hypothetical later rewards, but not independently of IQ. The interplay of cognitive processing and IQ with reward evaluation in ADHD requires further exploration.

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Journal of Child Psychology and Psychiatry. 2011 Mar;52:265-74.

**AUDITORY CONFLICT PROCESSING IN ADHD.**

**van Mourik R, Sergeant JA, Heslenfeld D, et al.**

**Background:** Impaired cognitive control has been implicated as an important developmental pathway to attention deficit/hyperactivity disorder (ADHD). Cognitive control is crucial to suppress interference resulting from conflicting information and can be measured by Stroop-like tasks. This study was conducted to gain insight into conflict processing in children with ADHD.

**Methods:** Event-related potentials (ERPs) were recorded in an auditory Stroop task. Twenty-four children with ADHD were compared with 24 control children (aged 8–12 years).

**Results:** No deficit in interference control was found on the auditory Stroop task in children with ADHD. Children with ADHD responded more slowly, less accurately and more variably compared to controls. No differences between the groups occurred in the early conflict-related ERPs. However, the difference between the congruent and the incongruent condition in the 450–550 ms time window was absent in the ADHD group compared to controls. In addition, the conflict sustained potential was found frontally in the ADHD group but parietally in the control group.

**Conclusions:** These ERP findings suggest that children with ADHD evaluate conflict to a lesser extent and differ in the way their brains select appropriate responses during conflict compared with controls.

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Journal of Child Psychology and Psychiatry. 2011 Feb;52:195-203.

**TIME PERCEPTION, PHONOLOGICAL SKILLS AND EXECUTIVE FUNCTION IN CHILDREN WITH DYSLEXIA AND/OR ADHD SYMPTOMS.**

**Gooch D, Snowling M, Hulme C.**

**Background:** Deficits in time perception (the ability to judge the duration of time intervals) have been found in children with both attention-deficit/hyperactivity disorder (ADHD) and dyslexia. This paper investigates time perception, phonological skills and executive functions in children with dyslexia and/ or ADHD symptoms (AS).

**Method:** Children with dyslexia-only (n = 17), AS-only (n = 17), comorbid dyslexia + AS (n = 25), and typically developing controls (n = 42), matched for age and non-verbal ability, were assessed on measures of phonological skills, executive function and time perception (duration discrimination and time reproduction).

**Results:** Children with dyslexia were impaired on measures of phonological skill and duration discrimination compared to children without dyslexia (though problems on duration discrimination appeared to be attributable to mild symptoms of inattention in this group). In contrast, children with AS exhibited impairments on measures of both time perception and executive function compared to children without AS. Children with dyslexia + AS showed an additive combination of the deficits associated with dyslexia-only and AS-only.

**Conclusions:** Dyslexia and AS appear to be associated with distinct patterns of cognitive deficit, which are present in combination in children with dyslexia + AS.

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Journal of Clinical Child and Adolescent Psychology. 2011 Mar;40:191-203.

**COMBINING PARENT AND CHILD TRAINING FOR YOUNG CHILDREN WITH ADHD.**

**Webster-Stratton CH, Reid MJ, Beauchaine T.**

The efficacy of the Incredible Years parent and child training programs is established in children diagnosed with oppositional defiant disorder but not among young children whose primary diagnosis is attention-deficit/hyperactivity disorder (ADHD). We conducted a randomized control trial evaluating the combined parent and child program interventions among 99 children diagnosed with ADHD (ages 4–6). Mother reported significant treatment effects for appropriate and harsh discipline, use of physical punishment, and monitoring, whereas fathers reported no significant parenting changes. Independent observations revealed treatment effects for mothers' praise and coaching, mothers' critical statements, and child total deviant behaviors. Both mothers and fathers reported treatment effects for children's externalizing, hyperactivity, inattentive and oppositional behaviors, and emotion regulation and social competence. There were also significant treatment effects for children's emotion vocabulary and problem-solving ability. At school teachers reported treatment effects for externalizing behaviors and peer observations indicated improvements in treated children's social competence.

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J Clin Rehab Tissue Eng Res. 2007;11:10500-02.

**ADAPTIVE BEHAVIOR EVALUATION FOR 35 PUPILS WITH ATTENTION-DEFICIT HYPERACTIVITY DISORDER.**

**Su B, Yuan Y.**

**Aim:** To analyze the behavioral characteristics and weak points of children with attention-deficit hyperactivity disorder (ADHD) by testing their adaptive behaviors, so as to provide evidence for the behavior modification of ADHD children by family and school.

**Methods:** Forty pupils, diagnosed as ADHD in the Second Affiliated Hospital of Dalian Medical University and Dalian Children Hospital were selected between September 2004 and March 2005 Their suspected degree was examined by Conners Rating Scale for ADHD, and their behaviors were accessed by Adaptive Behavior Scale for Children complicated by Yao Shuqiao and Gong Yaoxian, which was composed of 8

subscales such as sensory motor, self care, language development, private tendency, social responsibility, directional space-time, labor skill and economic behavior. The eight subscales were classified into independent factor, cognitive factor and social/self control factor. After factor integration, the values were increased, and convenient for total scores. The scale was scored by 8 grades and represented by social accommodate quotient: > 130 as very strong, 129-115 as strong, 114-85 as normal, 84-70 as edge, 69-55 as mild deficit, 54-40 as moderate deficit, 39-25 as severe deficit and < 25 as very severe deficit. The results were compared with normal norm for children and the percentage was counted. The data were analyzed by the Adaptive Behavior Scale for Children (urban version).

**Results:** Forty questionnaires were sent out and 35 were retrieved with the efficacy of 87%. Thirty-five cases were finally involved in the result analysis including 29 males and 6 females (4.84:2). 1 In Conners Rating Scale for ADHD, there were 18, 9, 5, 2, and 1 person at the five stages scored 15-18, 19-21, 22-24, 25-27 and 28-30, respectively. The subjects with mild suspicious phrase were predominant with 15 points or more. 2 The scores in sensory motor and self care ability and the norm percentage were gradually decreased from grade 1 to 6 (6.6%-2.0%, 36.2%-3.0%); the scores of the language development subscale and the norm percentage at grade 3 were different from those at grade 1 and 2 (8.0%, 17.8%, 12.6%), and improved significantly at grade 6 (25.5%); there were no obvious rules in the scores in private tendency and the norm percentage from grade 1 to grade 6, but the scores were increased at grade 2 and 6; there were no significant differences in the scores of social responsibility subscale and norm percentage among pupils of each grade (1.1%-6.5%); the scores in directional space-time, labor skill and economic behavior and norm percentage were increased with age. 3 Among the adaptive standards, 10 persons were at normal level, 13 edge level (28.3%), 7 mild deficit (8.7%), and 2 serious deficit (6%). There were significant individual differences in adaptive behavior development; the scores in social responsibility were lower. In factor analysis, the scores in social/self control factor were the lowest; the adaptive level of pupils at grade 3 and 4 were the lowest.

**Conclusion:** The educational diagnosis is accordance with medical diagnosis for ADHD children. There are problems in the social adaptability in most ADHD pupils, and the psychological fluctuation is evident in pupils at grade 3 and 4.

Journal of Emotional and Behavioral Disorders. 2011 Mar;19:55-64.

**IMPACT OF GROUP SIZE ON CLASSROOM ON-TASK BEHAVIOR AND WORK PRODUCTIVITY IN CHILDREN WITH ADHD.**

**Hart KC, Masetti GM, Fabiano GA, et al.**

This study sought to systematically examine the academic behavior of children with ADHD in different instructional contexts in an analogue classroom setting. A total of 33 children with ADHD participated in a reading comprehension activity followed by a testing period and were randomly assigned within days to either small-group instruction, whole-group instruction, or independent seatwork. The effects of instructional contexts on on-task behavior during instruction and on-task behavior and work productivity during testing were examined. Children with ADHD were found to be more on task during small-group instruction than both whole-group and independent seatwork instructional conditions. In the testing context, children with ADHD were found to be less productive in small-group than in the whole-group and independent seatwork conditions. The findings of this study have implications for future research evaluating the standard educational practices and accommodations made for children with ADHD in the classroom setting.

Journal of Forensic Psychiatry & Psychology. 2011 Feb;22:72-86.

**PREDICTORS OF INSTITUTIONAL BEHAVIOURAL DISTURBANCE AND OFFENDING IN THE COMMUNITY AMONG YOUNG OFFENDERS.**

**Young S, Misch P, Collins P, et al.**

This study aimed to evaluate the contribution of conduct disorder (CD), substance misuse and attention deficit hyperactivity disorder (ADHD) symptoms to the history of delinquency, current institutional behavioural problems and critical incidents (CI). Fifty-four adolescents in a secure facility were screened for ADHD and CD and completed the Maudsley violence questionnaire, the disruptive behaviour and social problems scale and the self-report delinquency scale. Substance misuse history as well as CI over the previous 10 weeks were also recorded. Hierarchical multiple regressions showed that substance misuse and violent cognitions were the best predictors of self-reported delinquency. In contrast, ADHD predicted disruptive institutional behaviour above and beyond that of CD and substance misuse. The findings suggest that ADHD symptoms are important in predicting institutional behavioural disturbance, whereas substance misuse and violent cognitions are better predictors of delinquency in the community.

Journal of Learning Disabilities. 2011 Jan;44:50-62.

**AN EXAMINATION OF MULTIPLE PREDICTORS OF ORTHOGRAPHIC FUNCTIONING.**

**Mesman GR, Kibby MY.**

The purpose of this study was to compare three variables in terms of how well they predict orthographic functioning. To this end, the authors examined the relative contributions of rapid automatic naming, exposure to print, and visual processing to a composite measure of orthographic functioning in a heterogeneous group of 8- to 12-year-old children. Hierarchical regression analyses revealed that rapid naming, exposure to print, and visual processing were each predictive of orthographic functioning when controlling for the other variables as well as vocabulary knowledge and phonological awareness. Thus, it appears that both linguistic and visual abilities are related to orthographic functioning.

Journal of Learning Disabilities. 2011 Mar;44:196-212.

**EXECUTIVE IMPAIRMENT DETERMINES ADHD MEDICATION RESPONSE: IMPLICATIONS FOR ACADEMIC ACHIEVEMENT.**

**Hale JB, Reddy LA, Semrud-Clikeman M, et al.**

Methylphenidate (MPH) often ameliorates attention-deficit/hyperactivity disorder (ADHD) behavioral dysfunction according to indirect informant reports and rating scales. The standard of care behavioral MPH titration approach seldom includes direct neuropsychological or academic assessment data to determine treatment efficacy. Documenting “cool” executive-working memory (EWM) and “hot” self-regulation (SR) neuropsychological impairments could aid in differential diagnosis of ADHD subtypes and determining cognitive and academic MPH response. In this study, children aged 6 to 16 with ADHD inattentive type (IT; n = 19) and combined type (n = 33)/hyperactive-impulsive type (n = 4) (CT) participated in double-blind placebo-controlled MPH trials with baseline and randomized placebo, low MPH dose, and high MPH dose conditions. EWM/ SR measures and behavior ratings/classroom observations were rank ordered separately across conditions, with nonparametric randomization tests conducted to determine individual MPH response. Participants were subsequently grouped according to their level of cool EWM and hot SR circuit dysfunction. Robust cognitive and behavioral MPH response was achieved for children with significant baseline EWM/SR impairment, yet response was poor for those with adequate EWM/ SR baseline performance. Even for strong MPH responders, the best dose for neuropsychological functioning was typically lower than the best dose for behavior. Findings offer one possible explanation for why long-term academic MPH treatment gains in ADHD have not been realized. Implications for academic

achievement and medication titration practices for children with behaviorally diagnosed ADHD will be discussed.

Journal of Learning Disabilities. 2011 Mar;44:184-95.

**A COGNITIVE STRATEGY INSTRUCTION TO IMPROVE MATH CALCULATION FOR CHILDREN WITH ADHD AND ID: A RANDOMIZED CONTROLLED STUDY.**

**Iseman JS, Naglieri JA.**

The authors examined the effectiveness of cognitive strategy instruction based on PASS (Planning, Attention, Simultaneous, Successive) given by special education teachers to students with ADHD randomly assigned by classroom. Students in the experimental group were exposed to a brief cognitive strategy instruction for 10 days, which was designed to encourage development and application of effective planning for mathematical computation, whereas the comparison group received standard math instruction. Standardized tests of cognitive processes and math achievement were given at pretest. All students completed math worksheets throughout the experimental phase. Standardized achievement tests (Woodcock-Johnson Tests of Achievement, Third Edition, Math Fluency and Wechsler Individualized Achievement Test, Second Edition, Numerical Operations) were administered pre- and postintervention, and Math Fluency was also administered at 1 year follow-up. Large pre-post effect sizes were found for students in the experimental group but not the comparison group on math worksheets (0.85 and 0.26), Math Fluency (1.17 and 0.09), and Numerical Operations (0.40 and -0.14, respectively). At 1 year follow-up, the experimental group continued to outperform the comparison group. These findings suggest that students with ADHD evidenced greater improvement in math worksheets, far transfer to standardized tests of math (which measured the skill of generalizing learned strategies to other similar tasks), and continued advantage 1 year later when provided the PASS-based cognitive strategy instruction.

J Pediatr Psychol. 2007;32:1203-13.

**ATTENTION DEFICIT HYPERACTIVITY DISORDER SYMPTOMS PREDICT NICOTINE DEPENDENCE AND PROGRESSION TO REGULAR SMOKING FROM ADOLESCENCE TO YOUNG ADULTHOOD.**

**Fuemmeler BF, Kollins SH, McClernon FJ.**

**Objective:** To examine the association between retrospectively reported attention deficit hyperactivity disorder (ADHD) symptoms and progression to smoking and the association with nicotine dependence.

**Methods:** Study sample consisted of a nationally representative cohort of U.S. adolescents ( $n = 13,494$ ). Logistic regression was used to examine ADHD symptoms from both the inattentive (IN) and hyperactive-impulsive (HI) domains and smoking trajectories. Linear regression was used to examine nicotine dependence.

**Results:** HI symptoms were associated with progression from nonsmoking to regular smoking (OR = 1.14, 95% CI = 1.07-1.21), and with progression from experimentation to regular smoking (OR = 1.16, 95% CI = 1.08-1.26). IN and HI symptoms were associated with nicotine dependence among current smokers (IN: (beta) = 0.17, SE = 0.03,  $p < 0.0001$ ; HI: (beta) = 0.10, SE = 0.04.,  $p < .001$ ).

**Conclusions:** These results have important implications for the development of prevention and treatment modalities.

J Psychiatry Neurosci. 2007;32:447.

**SITTING ON THE EDGE: WHEN TO TREAT SYMPTOMS OF INATTENTION WITHOUT THE FULL DSM-IV CRITERIA OF ADHD.**

**Joober R.**

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Journal of the American Academy of Child & Adolescent Psychiatry. 2011 Feb;50:171-79.

**CLONIDINE EXTENDED-RELEASE TABLETS FOR PEDIATRIC PATIENTS WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.**

**Jain R, Segal S, Kollins SH, et al.**

[Correction Notice: An erratum for this article was reported in Vol 50(3) of Journal of the American Academy of Child & Adolescent Psychiatry (see record 2011-04926-017). On page 174, the second paragraph, the eighth line reads "The p values were derived from two-sided tests, which were compared with the a level of 0.05 for statistical significance without adjusting for multiple group comparisons." The sentence should read, "The p values were derived from two-sided tests, which were compared with the a level of 0.05 for statistical significance adjusting for multiple group comparisons using Dunnett's method." The authors regret the error.]

**Objective:** This study examined the efficacy and safety of clonidine hydrochloride extended-release tablets (CLON-XR) in children and adolescents with attention-deficit/hyperactivity disorder (ADHD).

**Method:** This 8-week, placebo-controlled, fixed-dose trial, including 3 weeks of dose escalation, of patients 6 to 17 years old with ADHD evaluated the efficacy and safety of CLON-XR 0.2 mg/day or CLON-XR 0.4 mg/day versus placebo in three separate treatment arms. Primary endpoint was mean change in ADHD Rating Scale-IV (ADHD-RS-IV) total score from baseline to week 5 versus placebo using a last observation carried forward method. Secondary endpoints were improvement in ADHD-RS-IV inattention and hyperactivity/impulsivity subscales, Conners Parent Rating Scale-Revised: Long Form, Clinical Global Impression of Severity, Clinical Global Impression of Improvement, and Parent Global Assessment from baseline to week 5.

**Results:** Patients (N = 236) were randomized to receive placebo (n = 78), CLON-XR 0.2 mg/day (n = 78), or CLON-XR 0.4 mg/day (n = 80). Improvement from baseline in ADHD-RS-IV total score was significantly greater in both CLON-XR groups versus placebo at week 5. A significant improvement in ADHD-RS-IV total score occurred between groups as soon as week 2 and was maintained throughout the treatment period. In addition, improvement in ADHD-RS-FV inattention and hyperactivity/impulsivity subscales, Conners Parent Rating Scale-Revised: Long Form, Clinical Global Impression of Improvement, Clinical Global Impression of Severity, and Parent Global Assessment, occurred in both treatment groups versus placebo. The most common treatment-emergent adverse event was mild-to-moderate somnolence. Changes on electrocardiogram were minor and reflected the known pharmacology of clonidine.

**Conclusions:** Clonidine hydrochloride extended-release tablets were generally well tolerated by patients in the study and significantly improved ADHD symptoms in this pediatric population. Clinical trials registry information—Study Evaluating the Safety and Efficacy of Clonidel to Treat Children and Adolescents with Attention Deficit Hyperactivity Disorder (ADHD), URL: <http://www.clinicaltrials.gov>, unique identifier: NCT00556959.

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Journal of the American Academy of Child & Adolescent Psychiatry. 2011 Mar;50:283-92.

**ALTERED WHITE MATTER MICROSTRUCTURE IN CHILDREN WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.**

**Nagel BJ, Bathula D, Herting M, et al.**

**Objective:** Identification of biomarkers is a priority for attention-deficit/hyperactivity disorder (ADHD). Studies have documented macrostructural brain alterations in ADHD, but few have examined white matter microstructure, particularly in preadolescent children. Given dramatic white matter maturation across

childhood, microstructural differences seen in adolescents and adults with ADHD may reflect compensatory restructuring, rather than early neurophenotypic markers of the disorder.

**Method:** Using tract-based spatial statistics, mean fractional anisotropy (FA) maps were created using diffusion tensor imaging. FA, mean diffusivity (MD), and associated axial and radial diffusivities were compared between 16 children with ADHD and 20 healthy children (age 7-9 years).

**Results:** Youth with ADHD showed decreased FA in frontoparietal, frontolimbic, cerebellar, corona radiata, and temporo-occipital white matter compared with controls. In addition, ADHD was associated with lower MD in the posterior limb of the internal capsule and frontoparietal white matter and greater MD in frontolimbic white matter. Lower axial diffusion and/or higher radial diffusion were differentially observed for youth with ADHD in earlier versus later maturing areas of group FA/MD difference.

**Conclusions:** This study suggests that, even prior to adolescence, ADHD represents a disorder of altered structural connectivity of the brain, characterized by distributed atypical white matter microstructure. In addition, later maturing frontolimbic pathways were abnormal in children with ADHD, likely due to delayed or decreased myelination, a finding not previously demonstrated in the adolescent or adult stages of the disorder. These results suggest that disruptions in white matter microstructure may play a key role in the early pathophysiology of ADHD.

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J Am Acad Child Adolesc Psychiatry. 2008;47:76-85.

**PREDICTORS OF STABILITY OF ATTENTION-DEFICIT/HYPERACTIVITY DISORDER SUBTYPES FROM CHILDHOOD TO YOUNG ADULTHOOD.**

**Todd RD, Huang H, Todorov AA, et al.**

**OBJECTIVE:** To determine the 5-year prospective stability of population-based and DSM-IV subtypes of attention-deficit/hyperactivity disorder (ADHD) as well as to explore predictors of stability.

**METHOD:** A total of 708 twins ages 7 to 19 years who were identified from birth records of the state of Missouri and had participated in a study of ADHD were reassessed 5 years later in a blinded fashion. Stabilities of DSM-IV and population-based ADHD subtypes were compared using percentage of agreement with significance tested by the (kappa) statistic. Predictors of stability of subtype diagnosis were determined using multivariate logistic regression.

**RESULTS:** In general, 5-year ADHD subtype stability was poor to modest and ranged from 11.1% to 24.0% for DSM-IV for subtypes and from 14.3% to 35.3% for clinically significant population-derived subtypes. There were no predictors of diagnostic stability that applied across subtypes. There were subtype-specific predictors including a diagnosis of oppositional defiant disorder for DSM-IV primarily inattentive ADHD; lower verbal IQ for DSM-IV combined type ADHD; and younger age, oppositional defiant disorder, and medication use for population-defined severe combined ADHD.

**CONCLUSIONS:** Population-defined ADHD subtype criteria demonstrated modestly improved diagnostic stability over 5 years compared to DSM-IV subtypes. Few correlates or predictors of stability were identified.

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Neuropsychiatr Dis Treat. 2007;3:949-54.

**EFFECTS OF PSYCHO-EDUCATIONAL TRAINING AND STIMULANT MEDICATION ON VISUAL PERCEPTUAL SKILLS IN CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER.**

**Papavasiliou AS, Nikaina I, Rizou I, et al.**

Attention deficit hyperactivity disorder (ADHD) is treated with stimulants and psycho-educational remedial programs despite limited literature support for the latter. This study aimed to examine changes in a "Test of Visual Perceptual Skills" (TVPS) that has not been previously reported in children with ADHD enrolled in such a program. Methods: Sixteen children, 7-11 years old, with ADHD were involved in occupational therapy and special education geared towards attention training. Six months later methylphenidate 1

mg/kg/day was prescribed. It was not taken by eight children because of family choice. The TVPS was given twice, upon diagnosis, and 8 months post-intervention. The groups were compared by a repeated measures analysis of variance (ANOVA) with medication as a between groups factor and test-retest scores as within factor. Results: All children demonstrated increases in total scores in the second measurement. Medicated children scored higher but ANOVA showed a nonsignificant F for the two groups, medicated and unmedicated ( $F=0.0031$ ,  $p=0.9563$ ), indicating a nondifferential effect of the two levels of treatment. It revealed a significant F for the pre- and post-treatment total TVPS scores ( $F=30.91$ ,  $p<0.0001$ ) indicating a significant difference between pre- and post-treatment tests. The interaction between pre-post treatment and level of treatment (medicated-unmedicated) was nonsignificant ( $F=2.20$ ,  $p=0.1604$ ). Conclusion: TVPS scores improved in all children following intervention. Medicated children did better, but differences were nonsignificant.

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Pediatr Emerg Care. 2007;23:909-11.

**A 6-YEAR-OLD GIRL WITH SOMNOLENCE: PATCHING TOGETHER THE CLUES.**

**Shiber J, Fontane E, Rosier M.**

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Pharmacoepidemiol Drug Saf. 2007;16:1268-72.

**METHYLPHENIDATE USE IN CHILDREN AND RISK OF CANCER AT 18 SITES: RESULTS OF SURVEILLANCE ANALYSES.**

**Oestreicher N, Friedman GD, Jiang SF, et al.**

**Purpose:** A recent report linked methylphenidate (MPH) use in children to cytologic abnormalities in plasma lymphocytes, a possible cancer biomarker. The purpose of this study was to investigate the association of MPH use and childhood cancer risk.

**Methods:** Using automated pharmacy databases and the SEER-affiliated cancer registry of the Kaiser Permanente Medical Care Program (KPMCP), we compared cancer rates at 18 sites among 35 400 MPH users who received it before age 20 to rates among KPMCP membership (age, sex, and calendar year standardized). Medical records of MPH exposed cancer cases were reviewed to identify the presence of established risk factors.

**Results:** There were 23 cancers among MPH users, versus 20.4 expected (standardized morbidity ratio, SMR = 1.13, 95% confidence interval (0.72, 1.70)). Given the small number of cancers, site-specific SMR estimates were imprecise. Only one SMR was statistically significant at the  $p < 0.05$  level, which given the number of comparisons is consistent with the absence of a true association at any site. MPH use was associated with increased risk of lymphocytic leukemia (SMR = 2.64 (1.14, 5.20)), based on eight observed cases). The medical records of these exposed cases did not reveal any lymphocytic leukemia risk factors (prior cancer, radiotherapy or chemotherapy, or Down syndrome).

**Conclusions:** Our results are consistent with no moderate or strong association between MPH use and cancer risk in children, although our ability to examine dose and duration of use or risk at specific sites was limited by small numbers. Further study of MPH use and lymphocytic leukemia risk is needed to determine whether results are due to chance alone.

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Proc Natl Acad Sci U S A. 2007;104:19649-54.

**ATTENTION-DEFICIT/HYPERACTIVITY DISORDER IS CHARACTERIZED BY A DELAY IN CORTICAL MATURATION.**

**Shaw P, Eckstrand K, Sharp W, et al.**

There is controversy over the nature of the disturbance in brain development that underpins attention-deficit/hyperactivity disorder (ADHD). In particular, it is unclear whether the disorder results from a delay in

brain maturation or whether it represents a complete deviation from the template of typical development. Using computational neuroanatomic techniques, we estimated cortical thickness at >40,000 cerebral points from 824 magnetic resonance scans acquired prospectively on 223 children with ADHD and 223 typically developing controls. With this sample size, we could define the growth trajectory of each cortical point, delineating a phase of childhood increase followed by adolescent decrease in cortical thickness (a quadratic growth model). From these trajectories, the age of attaining peak cortical thickness was derived and used as an index of cortical maturation. We found maturation to progress in a similar manner regionally in both children with and without ADHD, with primary sensory areas attaining peak cortical thickness before polymodal, high-order association areas. However, there was a marked delay in ADHD in attaining peak thickness throughout most of the cerebrum: the median age by which 50% of the cortical points attained peak thickness for this group was 10.5 years (SE 0.01), which was significantly later than the median age of 7.5 years (SE 0.02) for typically developing controls (log rank test ( $\chi^2(1) = 5,609$ ,  $P < 1.0$  null 10-20)). The delay was most prominent in prefrontal regions important for control of cognitive processes including attention and motor planning. Neuroanatomic documentation of a delay in regional cortical maturation in ADHD has not been previously reported.

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Progress in Neuro-Psychopharmacology & Biological Psychiatry. 2011 Jan;35:47-52.

**THE INCREASE IN THETA/BETA RATIO ON RESTING-STATE EEG IN BOYS WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER IS MEDIATED BY SLOW ALPHA PEAK FREQUENCY.**

**Lansbergen MM, Arns M, van Dongen-Boomsma M, et al.**

Attention-deficit/hyperactivity disorder (ADHD) was found to be characterized by a deviant pattern of electrocortical activity during resting state, particularly increased theta and decreased beta activity. The first objective of the present study is to confirm whether individuals with slow alpha peak frequency contribute to the finding of increased theta activity in ADHD. The second objective is to explore the relation between resting-state brain oscillations and specific cognitive functions. From 49 boys with ADHD and 49 healthy control boys, resting-state EEG during eyes open and eyes closed was recorded, and a variety of cognitive tasks were administered. Theta and beta power and theta/beta ratio were calculated using both fixed frequency bands and individualized frequency bands. As expected, theta/beta ratio, calculated using fixed frequency bands, was significantly higher in ADHD children than control children. However, this group effect was not significant when theta/beta ratio was assessed using individualized frequency bands. No consistent relation was found between resting-state brain oscillations and cognition. The present results suggest that previous findings of increased theta/beta ratio in ADHD may reflect individuals with slow alpha peak frequencies in addition to individuals with true increased theta activity. Therefore, the often reported theta/beta ratio in ADHD can be considered a non-specific measure combining several distinct neurophysiological subgroups such as frontal theta and slowed alpha peak frequencies. Future research should elucidate the functional role of resting-state brain oscillations by investigating neurophysiological subgroups, which may have a clearer relation to cognitive functions than single frequency bands.

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Psychiatr Q. 2011 Mar;82:33-42.

**EVIDENCE-BASED RECOMMENDATIONS FOR THE TREATMENT OF AGGRESSION IN PEDIATRIC PATIENTS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER.**

**List BA, Barzman DH.**

An evidence-based practice project was completed to develop best practice recommendations for the treatment of aggression in children and adolescents with attention deficit hyperactivity disorder (ADHD). Ovid Medline, PsychInfo, the National Guidelines Clearinghouse, and the Cochrane Database of Systematic Reviews were searched with limits set for English language, years 1996 to January 2010. A search of the pediatric literature was conducted for synthesized evidence in the form of meta-analyses,

systematic reviews, or practice guidelines related to the treatment of aggression in children and adolescents with attention deficit hyperactivity disorder. Data were extracted using the LEGEND system. Three evidence-based care recommendations for the management of aggression in children and adolescents with ADHD were developed with an associated grade for the body of evidence. First-line pharmacotherapy for aggressive behavior in children and adolescents with ADHD should be ADHD medications. Additional research is needed to evaluate the efficacy of psychiatric medications on signs of aggression within the context of ADHD.

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Res Dev Disabil. 2011 Mar;32:549-59.

**A STAGED APPROACH FOR IDENTIFYING CHILDREN WITH DEVELOPMENTAL COORDINATION DISORDER FROM THE POPULATION.**

***Missiuna C, Cairney J, Pollock N, et al.***

The purpose of this study was to describe the motor, attention and intellectual characteristics of a population-based sample of children first screened for motor impairment and to discuss the recruitment and identification methods employed. A two stage cross-sectional, school-based survey was conducted to screen for children with motor coordination difficulties and to identify children with an existing diagnosis of attention deficit hyperactivity disorder/attention deficit disorder (ADHD/ADD). The identified children, and a random sample of typically developing children, were assessed to confirm or rule out the presence of developmental coordination disorder (DCD). Six thousand four hundred and seventy five children were invited to participate; 2943 children, with parental consent, completed the initial screening process. Two hundred eighty four children with possible motor impairment were identified. The parents of 113 children consented to a full assessment. Sixty eight children of the 113 children met diagnostic criteria for DCD, and 26 also had ADHD. Twenty eight of the 55 children who screened in with a diagnosis of ADHD were subsequently found to have DCD. The total number of children with confirmed characteristics of DCD was reduced after application of DCD diagnostic criteria. This study differs from others with regard to the additional screening for children with ADHD/ADD. The second stage assessment notably increased the number of children identified with both ADHD and DCD.

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Res Dev Disabil. 2011 Mar;32:510-19.

**PREDICTORS OF STRESS-RELATED GROWTH IN PARENTS OF CHILDREN WITH ADHD.**

***Finzi-Dottan R, Triwitz YS, Golubchik P.***

This study was designed to investigate stress-related growth in 71 parents of children with ADHD, compared with 80 parents of non-clinical children. Adopting Tedeschi and Calhoun's (2004) theoretical framework for predicting personal growth, the study investigated the contribution of emotional intelligence (individual characteristics), social support (environmental factors), parental self-efficacy and perceptions of parenting as a challenge vs. a threat (cognitive processing). Results indicated that emotional intelligence was the main predictor of stress-related growth, particularly for parents of ADHD children, emphasizing that this personal trait is especially relevant to coping with on-going parental strain; whereas social support made a greater contribution to growth for the control group than for parents of children with ADHD. Path analysis confirmed our research model, suggesting that parents' sense of competence and of parenthood as a challenge vs. a threat mediates between emotional intelligence and social support on the one hand, and growth on the other.

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Rev Neurol. 2007;44:S31-S35.

**THE PSYCHOPHARMACOLOGY OF THE COMORBID DISORDERS ASSOCIATED WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER.**

**Osa-Langreo A, Mulas F, De Meneses MT, et al.**

**Introduction.** The pharmacological treatment most commonly used in attention deficit hyperactivity disorder (ADHD) has traditionally consisted in the administration of psychostimulants. The particular association with comorbid disorders makes it essential to utilise different therapeutic approaches and this accounts for the growing therapeutic arsenal currently available for use in this condition.

**Development.** It is important to be familiar with the different comorbidities because they are especially frequent and also because of their effect on the prognosis. Thus, it is necessary to reach a good diagnosis as early as possible in order to implement a therapy that allows the problem to be curbed. To do so, we need to know about the different pharmaceuticals that have to some extent or other proved to be effective.

**Conclusions.** This paper aims to offer a global view of the problem by analysing the characteristics of the comorbid disorders associated with ADHD and the pharmacological tools that enable us to modify their deleterious effects.

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Rev Neurol. 2007;44:75-80.

**ATTENTION DEFICIT AND UNDERSTANDING OF NON-LITERAL MEANINGS: THE INTERPRETATION OF INDIRECT SPEECH ACTS AND IDIOMS.**

**Crespo N, Manghi D, Garcia G, et al.**

**Aim.** To report on the oral comprehension of the non-literal meanings of indirect speech acts and idioms in everyday speech by children with attention deficit hyperactivity disorder (ADHD).

**Subjects and methods.** The subjects in this study consisted of a sample of 29 Chilean schoolchildren aged between 6 and 13 with ADHD and a control group of children without ADHD sharing similar socio-demographic characteristics. A quantitative method was utilised: comprehension was measured individually by means of an interactive instrument. The children listened to a dialogue taken from a cartoon series that included indirect speech acts and idioms and they had to choose one of the three options they were given: literal, non-literal or distracter.

**Results.** The children without ADHD identified the non-literal meaning more often, especially in idioms. Likewise, it should be pointed out that whereas the children without ADHD increased their scores as their ages went up, those with ADHD remained at the same point.

**Conclusions.** ADHD not only interferes in the inferential comprehension of non-literal meanings but also inhibits the development of this skill in subjects affected by it.

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Rev Neurol. 2007;44:146-49.

**MOTOR ASSESSMENT IN SCHOOL-AGED CHILDREN WITH INDICATORS OF THE ATTENTION DEFICIT/HYPERACTIVITY DISORDER.**

**Poeta LS, Rosa-Neto F.**

**Introduction.** Attention deficit/hyperactivity disorder (ADHD) is one of the most frequent disorders in childhood. In the literature there are claims that ADHD is associated with important comorbidities, which include disorders affecting motor coordination.

**Aim.** To evaluate motor development of schoolchildren with ADHD indicators.

**Patients and methods.** The sample used in our study consisted of 31 schoolchildren (aged between 7.3 and 10.8 years) studying in the first and second years of primary education in state-run schools in Florianopolis, SC, Brazil, who had ADHD indicators in accordance with DSM-IV (Diagnostic and statistical manual of mental disorders) and attention deficit with hyperactivity disorder evaluation scale (EDAH)

criteria, which had been answered by teachers and parents. Motor evaluation was evaluated using the Motor Development Scale. The Epi Info 3.2.2 software application was used for descriptive statistics.

**Results.** Findings showed that 48.4% of the schoolchildren had a motor development that was considered to be 'low average' according to the Motor Development Scale; 35.5% were 'inferior'; 9.7% were 'very inferior'; and 6.4% were found to be 'medium average'. The mean motor development of the group as a whole was classified as being 'low average'; the greatest difficulties were temporal organisation ('very inferior'), spatial organisation ('inferior') and balance ('inferior'). Fine motor control, general motor control and body schema were classified as 'low average'. With respect to laterality, 48.4% were right-handed, 48.4% had crossed laterality and 3.2% had undefined laterality.

**Conclusions.** These results are in line with studies that suggest the existence of alterations in the motor coordination of children with symptoms of ADHD.

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Rev Neurol. 2007;45:393-99.

**ADHD RATING SCALE-IV IN A SAMPLE OF SPANISH SCHOOLCHILDREN: NORMATIVE DATA AND INTERNAL CONSISTENCY FOR TEACHERS AND PARENTS.**

**Servera M, Cardo E.**

**Introduction.** The ADHD Rating Scale-IV (ADHD RS-IV) is one of the most use scales for attention deficit hyperactivity disorder (ADHD), because has cut-off point regarding age, gender and setting, but the normalization data is based on American school samples.

**Aim.** Evaluation of cut-off point of ADHD-RS-IV for parents and teachers in a Spanish sample. Subjects and methods. The study used the score of ADHD-RS-IV from a prevalence study of ADHD in school children of 6-12 years. Using an intrasubject design between the three evaluators (parents and teachers) and the results of each subscale (IN, H/I, and TOT) according to gender and age factors. Then, we analyzed the reliability and internal consistency for each subscale and evaluator.

**Results.** There are no significant differences between the father and the mother; but there are between teachers, and father and/or mother scores. In relation to gender factor, boys' score is higher on inattention and hyperactivity-impulsivity than girls'. Our results show a reversal tendency in comparison with the American samples, in our case parents' scores were significantly higher than teachers'.

**Conclusion.** The use and normalization of the ADHD RS-IV will need to account not only for age, gender and setting but also for socio-cultural aspects.

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Rev Neurol. 2007;44:589-95.

**ATTENTION DEFICIT HYPERACTIVITY DISORDER: INTELLECTUAL PROFILE AND THE FREEDOM FROM DISTRACTION FACTOR.**

**Lopez Villalobos JA, Serrano Pintado I, Delgado Sanchez Mateos J, et al.**

**Introduction.** Attention deficit hyperactivity disorder (ADHD) usually presents a neuropsychological profile in which the freedom from distraction factor (FDF) is affected to a greater extent than the verbal comprehension factor (VCF) and the perceptual organisation factor (POF).

**Aim.** To determine the intellectual profile of clinical cases with ADHD through a specific analysis of the FDF, in which we evaluated the differences compared with the VCF and the POF, between types of ADHD and with WISC-R criteria, as well as the variables that affect the probability of FDF < VCF and POF.

**Patients and methods.** Our study involved a clinical sample of 167 cases of ADHD between 6 and 16 years of age. The cases were defined according to DSM-IV criteria and the evaluation was performed using WISC-R, the Child Symptom Inventory and the social and occupational activity assessment scale. Both descriptive and exploratory statistics were used. Means were compared using ANOVA and/or t tests. Alpha was accepted if it was equal to or below 0.05 and a logistic regression method was used (alpha model

parameters below or equal to 0.05). In each factor a 95% confidence interval and odds ratio were determined.

**Results.** The criterion  $FDF < VCF$  and  $FOP$  accounted for 71.3% of the cases with ADHD and  $FDF < (VCF + POF) / 2$  represented 81.4% (sensitivity: 81.4%). The FDF is significantly lower than both the mean that corresponds to factorial criteria derived from the WISC-R and the VCF and POF in the cases that were analysed. The mean FDF scores were significantly higher in ADHD-H (a type in which hyperactive-impulsivity predominates) than in ADHD-C (combined type) and ADHD-I (inattentive type). Comorbidity, social or school activity and intellectual quotient do not have a significant influence on the probability that  $FDF < VCF$  and  $POF$ .

**Conclusions.** The FDF is a neuropsychological dimension that is useful in evaluating ADHD.

Rev Neurol. 2007;44:S27-S30.

#### CLINICAL VARIABILITY AND CHARACTERISTICS OF ATTENTION DEFICIT HYPERACTIVITY DISORDER IN GIRLS.

**Valdizan Uson JR, Mercado E, Mercado-Undanivia A.**

**Introduction.** Attention deficit hyperactivity disorder (ADHD) is a neurobiological condition essentially characterised by inattention, hyperactivity and impulsiveness, and has a prevalence of around 5%. Because it is a biological disorder, both boys and girls with ADHD display these same symptoms, but more boys are diagnosed with ADHD (in a ratio of 3 to 1).

**Aim.** To examine the differences between the two sexes, their prevalence and possible female subtypes in ADHD.

**Patients and methods.** We conducted a retrospective study of 172 patients of both sexes who were attended as hospital neuropaediatric outpatients in the year 2004 according to Diagnostic and statistical manual of mental disorders (DSM-IV-TR) criteria. Their ages ranged between 4 and 14 years and they were divided into three groups: under 6, between 6 and 10, and from 11 to 14 years old. The girls were subdivided into four subtypes, in order of greater to lesser prevalence: shy, hypersociable, hyperactive and changeable.

**Results.** Both sexes showed the same response to methylphenidate. Only the group of boys presented other comorbidities such as negativism and conduct disorders; approximately 25% of them required treatment with atypical neuroleptic drugs.

**Conclusions.** a) Girls have certain specific clinical manifestations within the three common symptoms; b) methylphenidate is equally effective in both sexes; c) only boys display other disorders such as negativism and conduct disorders; and d) the brains of males and females are quite similar, but symptoms are expressed differently depending on environments and levels. (copyright) 2007, Revista de Neurologia

Rev Neurol. 2007;44:10-14.

#### ESTIMATION OF THE PREVALENCE OF ATTENTION DEFICIT/HYPERACTIVITY DISORDER AMONG THE STANDARD POPULATION ON THE ISLAND OF MAJORCA.

**Cardo E, Servera M, Llobera J.**

**Aim.** To determine the rate of prevalence of attention-deficit/hyperactivity disorder (ADHD) in children of school age (6-11 years) in the Island of Mallorca.

**Subjects and methods.** The epidemiological study was conducted using a community sample extracted by means of multi-stage stratified sampling according to areas (rural, city and touristy) and schooling (public, private and concerted) and consisted in 1,509 children of both sexes. The ADHD Rating Scales-IV (ADHD RS-IV) for home and school setting were used to collect data. The optimal approach to do a diagnostic evaluation, according with the literature, was using a cut-off point of 90 centil.

**Results.** The estimated prevalence of ADHD was 4.57% (confidence interval at 99%: 3.0-5.8%) and we also obtained 1.26% for the hyperactive subtype, 1.06% for the disattentional subtype, and 2.25% for the

combined subtype. Contrary to what was expected, prevalence was higher for females but no statistically significant. There were no statistically significant differences between levels, schools or areas.

**Conclusions.** The estimates for prevalence found in this study are consistent with those reported in the literature (between 3-5%). Using the ADHD RS-IV which has different cut-off point regarding age, sex and setting and the fact that it was a poblational based study could explain the higher prevalence in the females. We propose a normalization of the scales in our area in other to confirm our findings.

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Rev Neurol. 2007;44:S23-S25.

**DISCIPLINE STYLES IN FAMILIES WITH CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER: THEIR INFLUENCE ON THE COURSE OF THE DISORDER.**

**Miranda-Casas A, Grau-Sevilla D, Marco-Taberner R, et al.**

**Introduction.** Attention deficit hyperactivity disorder (ADHD) is caused by hereditary factors but it can only really be understood using a model that takes into account the interaction between genes and the environment. Discipline styles stand out among the factors offered by the familial environment that can influence the course of ADHD.

**Aims.** To compare the discipline styles employed by mothers of children with and without ADHD and to analyse how the subtype of ADHD and the presence of oppositional defiant disorder influence the discipline styles utilised by mothers of children with ADHD. **Subjects and methods.** We divided 167 mothers into two groups, one consisting of those who had a child with ADHD (n = 114) and a control group (n = 53), and they were asked to answer a semi-structured interview and a questionnaire about discipline styles.

**Results.** The statistical analyses showed that mothers of children with ADHD used more severe discipline strategies, especially if the ADHD was associated with oppositional defiant disorder.

**Conclusions.** Interventions must include family guidance focused on the dimensions of self-control and affective expression.

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School Psychology Quarterly. 2011 Mar;26:45-55.

**DISCRIMINANT VALIDITY OF THE BEHAVIOR RATING INVENTORY OF EXECUTIVE FUNCTION PARENT FORM FOR CHILDREN WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER .**

**Reddy LA, Hale JB, Brodzinsky LK.**

Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder, with concomitant executive function deficits often being the focus of empirical and clinical investigation. This study explored the validity of the Behavior Rating Inventory of Executive Function Parent Form (BRIEF; Gioia, Isquith, Guy, & Kenworthy, 2000) for children with ADHD and a matched control sample. Fifty-eight children with ADHD (69% with comorbidity) and 58 matched controls were found to exhibit statistically ( $p < .001$ ) and clinically significant group differences on the BRIEF scales. Discriminant function analyses revealed that the Behavior Regulation and Metacognition Indexes accurately classified 82% of the sample (86% of controls and 79% of children with ADHD correctly identified). The Behavior Regulation Index was found to make the most significant contribution overall to the discriminant function, consistent with arguments that response inhibition is the primary deficit in ADHD. Implications and future research are discussed.

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Tohoku J Exp Med. 2007;213:269-76.

**ASSOCIATION BETWEEN LOW SERUM FERRITIN AND RESTLESS LEGS SYNDROME IN PATIENTS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER.**

**Oner P, Dirik EB, Taner Y, et al.**

Attention deficit hyperactivity disorder (ADHD) is a neurobehavioral disorder characterized by pervasive inattention and/or hyperactivity-impulsivity. It has been suggested that ADHD symptoms are associated with restless legs syndrome (RLS), which is a neurological condition that is defined by an irresistible urge to move the legs. Increasing evidence suggests iron deficiency may underlie common pathophysiological mechanisms in subjects with ADHD and with RLS. To further define the relationship between iron deficiency and RLS in children and adolescents with ADHD, we evaluated 87 ADHD subjects: 79 boys and 8 girls with age 9.3 (plus or minus) 2.5 years (6-16 years). Various psychopathologies and the severity of the ADHD symptoms and serum ferritin levels were assessed. Diagnosis of RLS was made according to the International RLS Group criteria. The patients were evaluated for the iron deficiency (ferritin < 12 ng/ml). RLS was found in 29 (33.3%) of the 87 ADHD subjects. Parent-and teacher-rated behavioral and emotional problems and the severity of ADHD symptoms were not significantly different between ADHD subjects with RLS and those without RLS (n = 58). The rate of iron deficiency was significantly higher in ADHD subjects with RLS (n = 6, 20.7%) when compared with ADHD subjects without RLS (n = 1, 1.7%, p = 0.005). Our results showed that depleted iron stores might increase the risk of having RLS in ADHD subjects. Iron deficiency, which is associated with both ADHD and RLS, seems to be an important modifying factor in the relationship between these two conditions.

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Zeitschrift für Psychiatrie, Psychologie und Psychotherapie. 2011 Jan;59:25-36.

**WIRKSAMKEIT VERHALTENS-THERAPEUTISCHER MASSNAHMEN AUF DIE AUFMERKSAMKEITS- UND EXEKUTIVFUNKTIONEN BEI KINDERN UND JUGENDLICHEN MIT ADHD.**

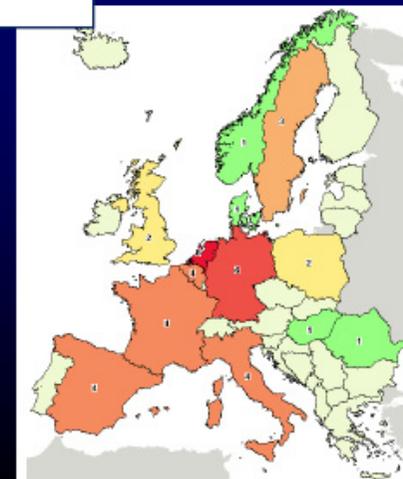
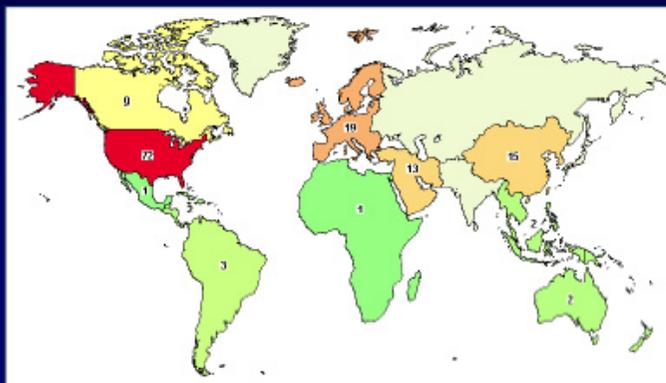
**Toussaint A, Petermann F, Schmidt S, et al.**

The present study examined whether learning theory-based techniques in a multimodal training lead to an improvement in attention regulation and executive functioning of children and adolescents with ADHD. 45 children and adolescents with ADHD participated for two weeks in a Summercamp Program which included a systematic Response-Cost-Token approach (RCT) and specific attention training. In an experimental pre-post design executive functions were assessed using the Test for Attention Performance (TAP) and the Trail-Making-Test (TMT). The results showed significant improvement in specific neuropsychological functions like attention regulation and inhibitory control. Since all participants discontinued medication before and during the training, these effects refer predominantly on RCT and attention training. Thus, fundamental learning theory-based techniques lead to substantial improvement in neuropsychological functioning of children with ADHD.

Study criteria: **ADHD, age 0-17, ongoing**  
127 studies, of which **58 pharmacological**

**N. studies Drug**

- 20 Methylphenidate
- 18 Atomoxetine
- 9 Guanfacine
- 5 Lis-dexamphetamine
- 2 Risperidone
- 2 Stimulant medication therapy
- 1 Amantadine
- 1 APO-clonidine
- 1 Biphentin Methylphenidate
- 1 Bupropion
- 1 Citalopram
- 1 Divalproex Sodium (Depakote)
- 1 Eszopiclone
- 1 Lovaza
- 1 LY2216684
- 1 YY-162
- 1 Melatonin
- 1 Mixed salt amphetamine
- 1 Observational study on: any pharmacological intervention
- 1 Other atypical antipsychotic drugs
- 1 Psychopharmacotherapy
- 1 St. John's Wort/Valerian Extract
- 1 Valproate



Osservatorio Nazionale sulla Sperimentazione Clinica dei Medicinali				
May 2011				
Starting year	Title	Indication	Coordinating Center	Participating Centers (No.)
2006	Investigation of <b>valproic acid</b> in fragile X syndrome boys with ADHD	Sindrome del cromosoma X fragile ADHD	Roma	1
2007	Valutazione del mantenimento della risposta clinica dopo trattamento in aperto con <b>atomoxetina</b> cloridrato in pazienti adulti ambulatoriali con Disturbo da Deficit dell'Attenzione e Iperattività' (ADHD): studio randomizzato verso placebo	Pazienti adulti ambulatoriali con ADHD	Milano	5
2008	Studio di Fase III, randomizzato, in doppio cieco, multicentrico, a gruppi paralleli, controllato rispetto a placebo e a comparatore attivo, con ottimizzazione della dose, sulla sicurezza e l'efficacia di <b>lisdexamfetamina dimesilato</b> (LDX) in bambini e adolescenti di età compresa tra 6-17 anni con disturbo da deficit di attenzione/iperattività' (ADHD)	Attention Deficit/Hyperactivity Disorder ADHD	Cagliari	5
2008	A Phase III, Double-Blind, Placebo-Controlled, Randomised Withdrawal, Multicentre, Extension, Safety and Efficacy Study of <b>Lisdexamfetamine Dimesylate</b> (LDX) in Children and Adolescents Aged 6-17 with Attention-Deficit/Hyperactivity Disorder (ADHD)	Disordine di iperattività'/deficit d'attenzione (ADHD)	Cagliari	4
2009	A Phase 3b, Double-blind, Randomised, Active-controlled, Parallel group Study to Compare the Time to Response of <b>Lisdexamfetamine Dimesylate</b> and <b>Atomoxetine</b> Hydrochloride in Children and Adolescents aged 6-17 years with Attention-Deficit/Hyperactivity Disorder (ADHD) Who Have Had an Inadequate Response to Methylphenidate Therapy	Deficit di Attenzione/Disordine di Iperattività' (ADHD)	Cagliari	1
2009	Studio di Fase III, in doppio cieco, controllato verso placebo, multicentrico, randomizzato e di ritiro, sul mantenimento a lungo termine di sicurezza ed efficacia di <b>guanfacina</b> cloridrato a rilascio prolungato in bambini e adolescenti tra 6 e 17 anni con disordine di iperattività'/deficit d'attenzione	ADHD	Pisa	2
2010	A phase 3, randomised, double-blind, multicentre, parallel-group, placebo- and active-reference, dose-optimisation efficacy and safety study of extended-release <b>Guanfacine</b> Hydrochloride in children and adolescents aged 6-17 years with Attention-Deficit/Hyperactivity Disorder	ADHD	Pisa	1

ADHD



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Ufficio Formazione Permanente



15 - 24 Giugno 2011

**LA VALUTAZIONE  
DEL TEMPERAMENTO  
IN ETA' SCOLARE E  
PRESCOLARE SECONDO IL  
MODELLO DI CLONINGER**

Sistema Sanitario



Regione  
Lombardia



INVITO A PROPORRE CONTRIBUTI  
**VIII CONGRESSO NAZIONALE sul  
“Disturbo da Deficit di Attenzione/Iperattività”**

Enti Organizzatori

**AIDAI** (Associazione Italiana Disturbi di Attenzione e Iperattività)

**AIRIPA** (Associazione It. Ricerca e Intervento in Psicopatologia dell'Apprendimento)

16 – 17 Settembre 2011

PESCARA – MONTESILVANO – OASI DELLO SPIRITO

RELAZIONI SU INVITO

Ana Miranda (Università di Valencia)

MANIFESTAZIONI PRE ORGANIZZATE

SIMPOSI: 1) Nuovi modelli di Parent Training (a cura di L. Benedetto)

2) Nuove evidenze dalle neuroscienze (a cura di P. Curatolo)

3) L'alunno ADHD a scuola (a cura di A. Ponziano)

4) Piccoli ADHD crescono: dalla prima infanzia all'età adulta (a cura di L. Luccherino)

5) La Comorbidità (a cura di E. Sechi)

WORKSHOP: I trattamenti farmacologici (a cura di A. Zuddas)

COMITATO SCIENTIFICO:

D. Besana, P. Bisiacchi, M. Bonati, E. Botturi, C. Cornoldi, P. Curatolo, R. De Beni, S. Di Nuovo, R. Giammario, F. Lambruschi, M. Lang, M. Margheriti, G. Masi, G.M. Marzocchi, C. Menazza, M. Nobile, S. Pezzica, C. Scheriani, E. Sechi, C. Vio, A. Zuddas

**Deadline per invio abstract: 16 maggio 2011** (indicando eventuale preferenza per poster).

Gli abstract dovranno essere redatti in formato Word e potranno contenere fino a 150 parole.

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Iniziativa nell'ambito del Progetto di Neuropsichiatria dell'Infanzia e dell'adolescenza  
Il Progetto è realizzato con il contributo, parziale, della Regione Lombardia  
(in attuazione della D.G.R. n. 10804 del 16/12/2009)  
Capofila Progetto: UONPIA Azienda Ospedaliera "Spedali Civili di Brescia"  
"Condivisione dei percorsi diagnostico-terapeutici per l'ADHD in Lombardia".

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