NEWSLETTER

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BIBIOGRAFIA ADHD SETTEMBRE 2010

Behav Brain Res. 2010;215:45-57.

FUNCTIONAL MRI EVIDENCE FOR INEFFICIENT ATTENTIONAL CONTROL IN ADOLESCENT CHRONIC CANNABIS ABUSE.

Abdullaev Y, Posner MI, Nunnally R, et al.

Control of attention is a key mechanism underlying behavior regulation. In this study we detail the aspects of attention that covary with the chronic use of cannabis throughout adolescence. We compared performance and brain activation differences in tasks involving attention between young adults with a history of chronic cannabis use during adolescence and matched non-user control subjects. Two tasks were used to activate attention networks: the Attention Network Task (ANT) and the use generation task. In the ANT, chronic users (N=14) differed from controls (N=14) in showing poorer performance (longer reaction time and more errors) on tasks requiring processing of incongruent stimuli reflecting the executive attention network, but not in networks related to alerting or orienting components of attention. Functional MRI of brain activity showed stronger activation within the right prefrontal cortex in chronic users compared to the control group specifically on ANT trials requiring executive attention. The use generation task also revealed significantly stronger activation of the same right prefrontal area in users compared to controls. These results suggest that chronic cannabis users have less efficient executive attention in conflict resolution tasks, demanding more activation in the right prefrontal areas to resolve conflict.

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Neuropsychiatr Enfance Adolesc. 2010 Aug;58:293-97.

CORRÉLATS COGNITIFS ET RELATIONNELS ASSOCIÉS AUX TROUBLES DE L'ATTENTION AVEC/SANS HYPERACTIVITÉ.

Abou-Abdallah T, Guilé JM, Menusier C, et al.

Objective: To retrospectively examine visual attention performances and early parent–child relationship characteristics in an OPD clinical sample of ADHD youths.

Method: The sample included 20 hyperactive drug naïve youths consecutively referred for attention evaluation to a Child & Adolescent Psychiatry OPD between 2004 and 2006. Demographic and clinical data were collected through a chart review process whereas attentional performances were independently assessed using the Conners's Continuous Performance Task device (CPT-II). Early parent–child relationships data were ascertained through the team consensus best-estimate procedure with respect to Berger's psychoanalytically-derived classification.

Results: Sixty percent of the sample presented with a DSM-IV-TR inattentive (n=1) or mixed (n=11) ADHD subtype whereas others participants displayed ADHD nos. Reaction Time (RT) variability was negatively correlated with age and was significantly associated with the DSM–IV-TR ADHD group. Taken separately, none of the Berger's correlates was correlated with either the clinical picture or the CPT performances. However, a composite score of early mother–child adversity was significantly associated with the DSM IV-TR ADHD group and not with the RT variability.

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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.

J Asthma. 2010;47:792-96.

THE ASSOCIATION BETWEEN SYMPTOMATIC ASTHMA AND NEUROBEHAVIORAL COMORBIDITIES AMONG CHILDREN.

Arif AA.

Background. Asthma affects millions of children in the United States. The extent to which asthma and other medical conditions coexist, however, is largely unknown.
Objective. This study aimed to determine associations between symptomatic asthma and neurobehavioral comorbidities among children in rural United States.
Methods. This cross-sectional study used data from 406 parents/caregivers of children aged 16 or younger, who completed survey questionnaires assessing their child's health status. Symptomatic asthma was defined as parents'/caregivers' report of physician diagnosed asthma and presence of night-time asthma symptoms in their children. The dependent variables were parents'/caregivers' reported comorbidities in children.
Results. Symptomatic asthma was present in 9 of the sample. Approximately 26 parents/caregivers reported their child had one or more mental health problems and 13 reported one or more neurological problems. In multivariable logistic regression analyses, a statistically nonsignificant 50 elevated odds of one or more mental health problems were observed for children with symptomatic asthma (adjusted odds ratio [OR]=1.5, 95 confidence interval [CI]=0.63.5). Of the individual comorbidities included in the mental health construct, more than 2-fold elevated odds of anxiety problems (adjusted OR=2.6, 95 CI=0.8-8.6) and attentional problems (adjusted OR=2.4, 95 CI=1.0-5.8) were observed for symptomatic asthma. The odds of reporting one or more neurological problems were 4-fold elevated (adjusted OR=4.0, 95 CI=1.6-10.0) for symptomatic asthma. Of the individual comorbidities included in the neurological construct a significantly elevated odds of hearing impairment or deafness was observed among children with symptomatic asthma (adjusted OR=8.2, 95 CI=1.5-45.3) as compared to the no asthma/no symptoms reference group.
Conclusion. These data suggest significant associations between symptomatic asthma and neurological comorbidities.

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Psychophysiology. 2010 Sep;47:838-45.

METHYLPHENIDATE ENHANCES PREPULSE INHIBITION DURING PROCESSING OF TASK-RELEVANT STIMULI IN ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.

Ashare RL, Hawk LW, Jr., Shiels K, et al.

ADHD is characterized by inattention, hyperactivity, and disinhibition, including the inability to screen out distracting stimuli. Prepulse inhibition (PPI) of startle indexes a related gating process and is enhanced during attended compared to ignored stimuli. We predicted that PPI during attended stimuli would be enhanced by the stimulant methylphenidate (MPH) and that this effect would be moderated by baseline PPI. Children with ADHD (n = 36) completed a baseline day and a randomized, double-blind medication trial (placebo vs. sustained release MPH). Bilateral startle eyeblink EMG was measured during a tone discrimination task. MPH enhanced PPI during attended, but not during ignored stimuli. Extending findings that pretreatment functioning moderates stimulant effects on PPI, this effect tended to be inversely related to baseline PPI. These data fit with the clinical literature on ADHD and the hypothesis that MPH enhances interference control for important environmental stimuli.

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Arq Neuro-Psiquiatr. 2010 Aug;68:541-44.

ATTENTION DEFICIT/HYPERACTIVITY DISORDER SYMPTOMS IN INDIGENOUS CHILDREN FROM THE BRAZILIAN AMAZON.

Azevêdo PVB, Caixeta L, Andrade LHS, et al.

The clinical constructs of attention deficit/hyperactivity disorder (ADHD) have been described in several cultures worldwide. Yet this symptomatic presentation still remains to be assessed in remote population groups.

Objective: To explore the possibility of the existence of ADHD symptoms among settlement-dwelling indigenous children of the Karajá ethnic group in the Brazilian Amazon and to estimate the rate of ADHD symptoms among 7-16-year-olds.

Method: All parents/caretakers of 7-16-year olds from all (N = 5) most populated indigenous groups were invited to participate, if they were worried about their children emotional/behavioural problems. Fifty three parents spontaneously came for a psychiatric interview (DSM-IV criteria applied), individually conducted at the settlement's health post by a child psychiatrist.

Results: The estimated rate of ADHD symptoms in problematic indigenous children aged 7-16 years was 24.5% (95% CI: 13.6-35.4) since 13 out of 53 parents/caretakers reported the classical triad of ADHD symptoms (inattentiveness, hyperactivity, impulsiveness).

Conclusion: ADHD is a clinically relevant construct in the Karajá indigenous population, representing a major concern among parents/caretakers of children and adolescents from this ethnic group.

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Audiol Med. 2010;8:129-36.

SPEECH-EVOKED AUDITORY POTENTIALS IN ATTENTION DEFICIT HYPERACTIVITY DISORDER.

Azzam H, Hassan DM.

Objective: To explore the processing of auditory information through auditory brainstem and higher cortical regions in a sample of children with attention deficit hyperactivity disorder (ADHD) of the combined inattention and hyperactivity subtype (ADHD/C) using auditory evoked potentials.

Study Design: Fifteen Arabic speaking ADHD/C children were compared to 15 age-matched normal controls, aged between five and ten years. A Mini-International Neuropsychiatric Interview for Children and Adolescents (Arabic version) was performed to confirm the diagnosis, subtype of ADHD and to exclude comorbid conditions. All children were subjected to Auditory Brainstem Evoked Response (ABR) to click, speech ABR and cortical Mis-Match Negativity (MMN) to speech stimuli.

Results: Thirty-three percent of the ADHD/C group showed prolongation of absolute and/or inter-peak wave latencies of the click ABR beyond two standard deviations. The peak latency of the onset waves for speech ABR was abnormal in 87% of the study group. Only three ADHD/C children gave normal MMN.

Conclusion: This study demonstrated that abnormal auditory brainstem timing with reduced cortical functions was a characteristic in the studied ADHD/C children. Speech ABR can serve as a biological marker for brainstem neural asynchrony in children with ADHD/C. It might help to organize the highly heterogeneous population of ADHD into more homogeneous subgroups, at least on a particular biological indicator, specifically in individuals who cannot perform the behavioural measures. Further research is needed to determine whether individuals within these subgroups share a similar auditory perceptual profile.

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Dev Neuropsychol. 2010 Sep;35:494-505.
TWO FORMS OF IMPLICIT LEARNING IN CHILDHOOD ADHD.
Barnes KA, Howard JH, Jr., Howard DV, et al.
Attention deficit hyperactivity disorder (ADHD) is characterized by inattention, impulsivity, and hyperactivity mediated by frontal-striatal-cerebellar dysfunction. These circuits support implicit learning of perceptual-motor sequences but not visual-spatial context. ADHD and control children performed the Alternating Serial Reaction Time (ASRT) task, a measure of sequence learning, and the Contextual Cueing (CC) task, a measure of spatial contextual learning. Relative to controls, children with ADHD showed inconsistent ASRT learning but did not differ on CC learning. Thus, implicit sequence learning, a cognitive process mediated by frontal-striatal-cerebellar circuitry that is not under executive control, was atypical in ADHD.

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J Neurol Sci. 2009;285:S113.
DEFICIENT FUNCTIONAL NETWORKS OF WORKING MEMORY IN CHILDREN WITH EPILEPSY AND/OR ADHD.
Bechtel N, Kobel M, Penner IK, et al.
Purpose: Children with epilepsy have a significant risk for attention deficit/hyperactivity disorder (ADHD) and therefore often show deficits in working memory performance. However, it is not yet clear whether there are specific differences in the underlying mechanisms of working memory capability between children with epilepsy and combined ADHD, and children with developmental ADHD.
Method: Eight boys with diagnosed epilepsy and ADHD, 13 boys with behavioral ADHD and 12 healthy controls were investigated using fMRI. For fMRI three different N-back tasks with increasing difficulty were applied. Participants had to respond to visually projected numbers with a button-press according to the instructions. Functional images were recorded on a 3T human head scanner.
Results: Behavioral results showed that all boys performed on a high level in the 0-back task. In the more demanding 2- and 3-back tasks healthy controls performed on a higher level than boys with behavioral ADHD. Performance of boys with combined epilepsy/ADHD was not as good as in healthy controls but better than in boys with behavioral ADHD. On the functional level all participants showed relatively few activation in the 0-back task. In the two more demanding tasks all participants showed the expected frontal and parietal activations, which were more pronounced in healthy controls. Interestingly, only healthy controls showed additional activation in the cerebellum.
Conclusion: In contrast to healthy controls, both patient groups showed decreased activation within the frontal-parietal network and a lack of activation in the cerebellum. These results indicate that the neural dysfunctions of working memory performance are comparable in children with epilepsy and/or ADHD. Behavioral data support these findings only partly. Although boys with combined epilepsy/ADHD showed a reduced working memory capability it was not as deficient as in boys with behavioral ADHD.

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NeuroImage. 2010;53:935-42.
DOPAMINE TRANSPORTER GENE VARIATION MODULATES ACTIVATION OF STRIATUM IN YOUTH WITH ADHD.
Bedard AC, Schulz KP, Cook EH, et al.
Polymorphisms in the 3'UTR variable number tandem repeat (VNTR) of exon 15 of the dopamine transporter gene (DAT1) have been linked to attention-deficit hyperactivity disorder (ADHD); moreover, variability in DAT1 3'UTR genotype may contribute to both heterogeneity of the ADHD phenotype and differences in response to stimulant medications. The impact of this VNTR on neuronal function in individuals with ADHD remains unclear despite evidence that the

polymorphisms influence dopamine transporter expression. Thus, we used event-related functional magnetic resonance imaging to examine the impact of DAT1 3'UTR genotype on brain activation during response inhibition in unmedicated children and adolescents with ADHD. Twenty-one youth with ADHD who were homozygous for the 10-repeat (10R) allele of the DAT1 3'UTR and 12 youth who were carriers of the 9-repeat (9R) allele were scanned while they performed a Go/No-Go task. Response inhibition was modeled by contrasting activation during correct No-Go trials versus correct Go trials. Participants who were homozygous for the DAT1 3'UTR 10R allele and those who had a single 9R allele did not differ on percent of trials with successful inhibition, which was the primary measure of inhibitory control. Yet, youth with the DAT1 3'UTR 10R/10R genotype had significantly greater inhibitory control-related activation than those with one 9R allele in the left striatum, right dorsal premotor cortex, and bilaterally in the temporoparietal cortical junction. These findings provide preliminary evidence that neural activity related to inhibitory control may differ as a function of DAT1 3'UTR genotype in youth with ADHD.

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J Pediatr. 2010;157:635-40.

A NATURALISTIC 10-YEAR PROSPECTIVE STUDY OF HEIGHT AND WEIGHT IN CHILDREN WITH ATTENTION-DEFICIT HYPERACTIVITY DISORDER GROWN UP: SEX AND TREATMENT EFFECTS.

Biederman J, Spencer TJ, Monuteaux MC, et al.

Objective: To assess the effect of attention-deficit/hyperactivity disorder (ADHD) and its treatment on growth outcomes in children followed into adulthood.

Study design: Two identically designed, longitudinal, case-control studies of males and females with and without ADHD were combined; 124 and 137 control and subjects with ADHD, respectively, provided growth information at the 10- to 11-year follow-up. We used linear growth curve models to estimate the effect of time on change in height and whether this effect differed by sex and ADHD status. We also examined the effect of stimulant treatment on growth outcomes.

Results: We found no evidence that ADHD was associated with trajectories of height over time or differences at follow-up in any growth outcomes. Similarly, we found no evidence that stimulant treatment was associated with differences in growth. However, among subjects with ADHD, major depression was associated with significantly larger weight in females and smaller height in males.

Conclusions: Our results do not support an association between deficits in growth outcomes and either ADHD or psychostimulant treatment for ADHD. These findings extend the literature on this topic into young adulthood and should assist clinicians and parents in formulating treatment plans for children with ADHD.

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Am J Psychiatry. 2010;167:1066-74.

FAMILIAL TRANSMISSION AND HERITABILITY OF CHILDHOOD DISRUPTIVE DISORDERS.

Bornovalova MA, Hicks BM, Iacono WG, et al.

Objective: There is substantial evidence of a link between parental substance use disorders and antisocial behavior and childhood disruptive disorders in offspring, but it is unclear whether this transmission is specific to particular disorders or if a general liability accounts for familial resemblance. The authors examined whether the association between parental externalizing disorders and childhood disruptive disorders in preadolescent offspring is a result of the transmission of general or disorder-specific liabilities and estimated the genetic and environmental contributions to variation in these general and specific liability indicators. Method: Participants were 1,069 families consisting of 11-year-old twins and their biological mother and father. Structural equation modeling was used to simultaneously estimate the general and specific transmission effects of four parental externalizing disorders (conduct disorder, adult antisocial behavior, alcohol dependence, and drug dependence) on childhood disruptive

disorders (attention deficit hyperactivity disorder, conduct disorder, and oppositional defiant disorder). Results: Parent-child resemblance was accounted for by the transmission of a general liability to externalizing disorders, and this general liability was highly heritable. Specific effects were also detected, but for sibling rather than parental transmission. Specific genetic and nonshared environmental effects were detected for each childhood disruptive disorder, but only conduct disorder exhibited a significant shared environmental effect. Conclusions: A highly heritable general liability accounts for the parent-child transmission of externalizing psychopathology from parents to their preadolescent offspring. This general liability should be a focus of research for both etiology and intervention

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Curr Pharm Des. 2010;16:2416-23.

IMPROVING MEDICATION ADHERENCE IN CHRONIC PEDIATRIC HEALTH CONDITIONS: A FOCUS ON ADHD IN YOUTH.

Chacko A, Newcorn JH, Feirsen N, et al.

Chronic pediatric health conditions pose a significant challenge for youth, their families and professionals who treat these conditions. Long-term adherence to interventions, including and often-times, pharmacological interventions, is necessary but often problematic. Understanding factors related to poor adherence and intervening to improve adherence is essential in order to maximize long-term outcomes. Attention-deficit/hyperactivity disorder (ADHD) is one such chronic health condition requiring long-term adherence to treatment. The aims of this review are to 1) review the extant literature regarding rates of adherence to medication for youth with ADHD; 2) summarize what is known regarding factors that impede and support greater adherence to medication; 3) introduce the Unified Theory of Behavior Change as a conceptual model that may assist in developing adherence treatment packages to support medication adherence; and 4) describe several potential interventions based on the Unified Theory of Behavior Change that may improve adherence to medication for youth with ADHD. Although pharmacological interventions for youth with ADHD have been evaluated for decades, only more recently has adherence to medication been the subject of interest. However, this literature has exclusively focused on understanding factors related to adherence, with no empirical studies of interventions to improve adherence in youth with ADHD. This paper provides a rationale and research agenda for systematic study of interventions to support medication adherence in youth with ADHD.

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Journal of Child Psychology and Psychiatry. 2010 Sep;51:1050-57.

EFFECT OF ENVIRONMENTAL EXPOSURE TO LEAD AND TOBACCO SMOKE ON INATTENTIVE AND HYPERACTIVE SYMPTOMS AND NEUROCOGNITIVE PERFORMANCE IN CHILDREN.

Cho SC, Kim BN, Hong YC, et al.

Background: The present study assessed the association between blood lead and urinary cotinine levels and inattentive and hyperactive symptoms and neurocognitive performance in children.

Methods: A total of 667 children (age range 8-11) were recruited from nine schools in five Korean cities. The teachers and parents completed the Korean version of the Attention-deficit hyperactivity disorder Rating Scales (K-ARS), and the children performed neurocognitive tests. Blood lead and urinary cotinine levels were then measured.

Results: The inattentive, hyperactive, and total scores of the teacher-rated K-ARS were positively associated with blood lead level, and the results of the continuous performance test (CPT), Stroop Color Word Test, and Children s Color Trails Test were inversely associated with urinary cotinine level when controlled for age, gender, father's educational level, maternal IQ, child's IQ, residential area, birth weight, and cotinine (for lead) or lead (for cotinine). The association

between blood lead level and commission errors score on the CPT disappeared when the effect of urinary cotinine level was controlled.
Conclusions: These findings indicate that environmental exposure to tobacco smoke in children is associated with poor neurocognitive performance, and low levels of lead are associated with inattention and hyperactivity symptoms.

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CNS Drugs. 2010;24:843-66.
THE IMPACT OF MEDICATIONS ON QUALITY OF LIFE IN ATTENTION-DEFICIT HYPERACTIVITY DISORDER: A SYSTEMATIC REVIEW.
Coghill D.
Quality of life (QOL) describes an individuals subjective perception of their position in life as evidenced by their physical, psychological and social functioning. Although an established outcome measure in physical health, QOL has more recently become an increasingly important measure in mental health clinical work and research. This article reviews the evidence describing the impact of medications on QOL in attention-deficit hyperactivity disorder (ADHD). Databases were searched for research studies describing the effects of medication on QOL in ADHD: 25 relevant studies were identified. Most (n=20) of these studies have focused on children and adolescents, and most have investigated a single molecule, atomoxetine (n=15), with relatively few studies investigating methylphenidate (n=5), amfetamines (n=4) and manifaxine (n1).These studies support a positive short-term effect of medication on QOL in ADHD for children, adolescents and adults that mirrors, to some extent, the effects of these medications on ADHD symptoms, although with smaller effect sizes. Notwithstanding measurement issues, it will continue to be important that those designing and conducting clinical trials in ADHD, including both pharmacological and non-pharmacological treatments, continue to include measures of QOL as secondary outcome measures. In particular, information about QOL effects in adults and in subjects of all ages taking methylphenidate and amfetamine treatments is urgently needed. The lack of systematic studies of the impact on QOL of psychological therapies, either on their own or in multimodal combinations with medication, is a serious omission that should be urgently addressed.

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Journal of Attention Disorders. 2010 Sep;14:138-46.
Parental attributions for success in managing the behavior of children with ADHD.
Coles EK, Pelham WE, Gnagy EM.
Objective: The current study evaluated the effects of differing intensities of behavior modification and medication on parents' self-reported success in managing their child's misbehavior and the attributions parents gave for success or failure.
Method: Children were randomized to receive in counterbalanced orders different levels of behavior modification, each for 3-week cycles. In addition, medication was manipulated using a medication assessment procedure. Parents reported daily how successful they were in managing their child's misbehavior and the attributions for either their success or failure.
Results: Parents of children with ADHD generally felt successful in managing their child's behavior, regardless of treatment condition. In the high behavior modification condition, they were more likely to endorse items that attributed their success to their own effort.
Conclusion: In conditions in which parents were given more intensive tools to manage misbehavior they were more likely to attribute their success to their own effort.

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Neuropsychiatr Enfance Adolesc. 2010 Aug;58:298-305.
Les effets de la ritaline sur les plans du comportement et du fonctionnement mental chez l'enfant hyperactif.
Combret R.
The infantile hyperactivity is today a matter of concern to the society in relation to the difficulties to manage the behavior of these children, as well at the house as at the school. From a theoretical point of view, the debate is conflicting on the genesis of the disorder between the partisans of the Anglo-Saxon and French-speaking approaches within the background the proposition of treatment with the prescription drug or psychoanalytical therapies. This research work presents at first a group of 22 children and reports their medical examination in order to establish the attention deficit hyperactivity disorder (ADHD). Secondly, our understanding of the psychomotor instability is given, from our psychologist's training clinician, by being interested in the sense and in the value of the symptoms in the family and individual psychic savings of these children. The last part, presenting a longitudinal approach, brings the question of the effects of the ritaline, both from the point of view of the symptoms of the hyperactivity and of the mental functioning.

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CNS Drugs. 2010;24:755-68.
EFFECTS OF GUANFACINE EXTENDED RELEASE ON OPPOSITIONAL SYMPTOMS IN CHILDREN AGED 612 YEARS WITH ATTENTION-DEFICIT HYPERACTIVITY DISORDER AND OPPOSITIONAL SYMPTOMS: A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL.
Connor DF, Findling RL, Kollins SH, et al.
Objective: To evaluate the efficacy and safety of guanfacine extended release (XR, Intuniv(trademark) Shire Development Inc., Wayne, PA, USA) in the treatment of oppositional symptoms in children aged 6-12 years with a diagnosis of attention-deficit hyperactivity disorder (ADHD) and the presence of oppositional symptoms.
Subjects and Methods: In this randomized, double-blind, placebo-controlled, multicentre, flexible-dose, dose-optimization study, children aged 6-12 years were randomized to receive guanfacine XR (1-4mg/day) or placebo for 9 weeks. Screening and washout periods were followed by a 5-week dose-optimization period, a 3-week dose-maintenance period and a 1-week tapering period. The primary efficacy measure was change from baseline to endpoint in the oppositional subscale of the Conners' Parent Rating Scale-Revised: Long Form (CPRS-R:L) score. Change in ADHD Rating Scale IV (ADHD-RS-IV) total score was a secondary efficacy measure. Safety assessments included adverse events (AEs), vital signs, ECG readings and laboratory studies.
Results: A total of 217 children were enrolled: 138 were randomized to receive guanfacine XR and 79 to receive placebo. Least-squares mean reductions from baseline to endpoint in CPRS-R:L oppositional subscale scores were 10.9 in the guanfacine XR group compared with 6.8 in the placebo group ($p < 0.001$; effect size = 0.59). A significantly greater reduction in ADHDRS-IV total score from baseline to endpoint was also seen in the guanfacinetreated group compared with the placebo group (23.8 vs 11.5, respectively; $p < 0.001$; effect size = 0.92). A post hoc correlation analysis between percentage reduction from baseline to endpoint in CPRS-R:L oppositional subscale and ADHD-RS-IV total scores indicated that the decreases in oppositional symptoms and ADHD symptoms were highly correlated ($r = 0.74$). The most commonly reported, treatment-emergent AEs (TEAEs) in the guanfacine XR group were somnolence (50.7%), headache (22.1%), sedation (13.2%), upper abdominal pain (11.8%) and fatigue (11.0%) and most were mild or moderate in severity. TEAEs of sedation, somnolence or hypersomnia were experienced by 62.5% of subjects in the guanfacine XR group. These events were most common during the dose-titration period but most (63.5%) resolved prior to the taper period. TEAEs of fatigue,

lethargy and asthenia were reported in 11.0%, 3.7% and 0.0% of subjects in the guanfacine XR group, respectively. Most subjects receiving guanfacine XR demonstrated modest changes in blood pressure, pulse rate and ECG readings that were not considered clinically significant.
Conclusions: In this population of children aged 6-12 years with ADHD and the presence of oppositional symptoms, significant reductions in CPRS-R:L oppositional subscale and ADHD-RS-IV total scores were observed with guanfacine XR treatment compared with placebo. Treatment with guanfacine XR at optimized doses was associated with mostly mild or moderate TEAEs. The findings of this study support the efficacy of guanfacine XR in the treatment of children with ADHD and the presence of oppositional symptoms.

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OTJR: Occupation, Participation and Health. 2010;30:122-32.
EMPATHY IN THE PLAY OF CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER.
Cordier R, Bundy A, Hocking C, et al.
Many children with attention deficit hyperactivity disorder (ADHD) have serious social and peer difficulties that can lead to adverse outcomes in adolescence and adulthood. Play provides a natural context to explore those interactional problems. This study aimed to examine the similarities and differences in play behavior of children as having ADHD and typically developing children. Participants were children (aged 5 to 11 years) diagnosed as having ADHD (n = 112) and typically developing peers (n = 126) who were matched based on age, ethnicity, and gender. The Test of Playfulness (ToP) was used to measure play. Children with ADHD performed similarly to typically developing peers on ToP items that related most directly to the primary symptoms of ADHD but scored significantly lower on several ToP social items; however, they also scored higher on one difficult social item and no differently on two others, suggesting that the problems may be developmentally inappropriate lack of empathy rather than simply poor social skills.

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Curr Pharm Des. 2010;16:2424-33.
STIMULANT DRUG EFFECTS ON ATTENTION DEFICIT/HYPERACTIVITY DISORDER: A REVIEW OF THE EFFECTS OF AGE AND SEX OF PATIENTS.
Cornforth C, Sonuga-Barke E, Coghill D.
Objective: As dopamine functioning varies by sex and age it might be expected that the effects of methylphenidate or amfetamine, the psychostimulants used for the treatment of Attention Deficit /Hyperactivity Disorder (ADHD), will also be moderated by these factors. Here we review the published literature on whether stimulant effects in ADHD symptoms vary by age and sex.
Method: We searched for studies published from 1989 until October 2009. Databases searched included U.S. National Library of Medicine (PubMed), Medline, EMBASE, PsycINFO and ISI Web of Knowledge. Firstly, we reviewed the effects of stimulant drugs on male and female patients and also patients of pre-school, middle childhood, adolescence and adulthood. Secondly, we reviewed studies that directly tested the moderating effect of age and sex on stimulant treatment outcome.
Results: Randomised controlled trials confirm that stimulant medication is efficacious for, and well tolerated by, males and females and patients across the age range; although preschoolers appear to have a less beneficial response and more side effects. Few studies that specifically examined the moderating effect of age and/or sex were identified. For sex, no effects on overall response were found, although one study reported that sex moderated methylphenidate pharmacodynamics. The few effects found for age were small and inconsistent.
Conclusions: The available evidence suggests that stimulant medication, when appropriately administered, has efficacy as an ADHD treatment for both sexes and across all ages. There are

currently too few published papers examining the effects of sex and age to draw strong conclusions about moderation. Further studies of the pharmacodynamics of stimulants on symptoms measured using objective tests in the laboratory or classroom setting need to be undertaken.

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J Psychopathol Behav Assess. 2010;32:373-84.

CONCURRENT VALIDITY OF THE CHILD BEHAVIOR CHECKLIST DSM-ORIENTED SCALES: CORRESPONDENCE WITH DSM DIAGNOSES AND COMPARISON TO SYNDROME SCALES.

Ebesutani C, Bernstein A, Nakamura BJ, et al.

This study used receiver operating characteristic (ROC) methodology and discriminative analyses to examine the correspondence of the Child Behavior Checklist (CBCL) rationally-derived DSM-oriented scales and empirically-derived syndrome scales with clinical diagnoses in a clinic-referred sample of children and adolescents (N=476). Although results demonstrated that the CBCL Anxiety, Affective, Attention Deficit/Hyperactivity, Oppositional and Conduct Problems DSM-oriented scales corresponded significantly with related clinical diagnoses derived from parent-based structured interviews, these DSM-oriented scales did not evidence significantly greater correspondence with clinical diagnoses than the syndrome scales in all cases but one. The DSM-oriented Anxiety Problems scale was the only scale that evidenced significantly greater correspondence with diagnoses above its syndrome scale counterpart -the Anxious/Depressed scale. The recently developed and rationally-derived DSM-oriented scales thus generally do not add incremental clinical utility above that already afforded by the syndrome scales with respect to corresponding with diagnoses. Implications of these findings are discussed.

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Kobe J Med Sci. 2010;56:12-17.

SCORE OF INATTENTION SUBSCALE OF ADHD RATING SCALE-IV IS SIGNIFICANTLY HIGHER FOR AD/HD THAN PDD.

Fujibayashi H, Kitayama S, Matsuo M.

Attention-deficit/hyperactivity disorder (AD/HD) and pervasive developmental disorder (PDD) must be differentiated because the respective treatments are different. However, they are difficult to distinguish because they often show similar symptoms. At our hospital, we have the rearer of a patient answer both the ADHD Rating Scale-IV (ADHD-RS) and the Autism Spectrum Screening Questionnaire (ASSQ), and use the results as an aid for the diagnosis of AD/HD or PDD. These results were compared with reference to PDD and AD/HD for an examination of the features of the two disorders. The subjects of our study were 45 children with AD/HD and 77 children with PDD. ADHD-RS score was significantly higher for AD/HD than PDD, but the total ASSQ score was significantly higher for PDD than AD/HD. Furthermore, for the inattention subscale of ADHD-RS, both total score and number of high-score items were significantly higher for AD/HD than PDD. As for the ASSQ score for PDD, it was significantly higher than for AD/HD in the domains of repetitive behavior, social interaction, and communication problems. In addition, PDD features many high-score items in the social interaction domain. We thought that these results about both ADHD-RS and ASSQ were useful for the differentiation of AD/HD or PDD.

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Pediatr Neurol. 2010;43:300-02.

PATERNAL AGE IN AUTISM SPECTRUM DISORDERS AND ADHD.

Gabis L, Raz R, Kesner-Baruch Y.

Increased paternal age has been associated with an increased risk for autism spectrum disorders. The present study compared the paternal age distribution in autism spectrum disorders children with that of the general population and among children with attention deficit hyperactivity disorder. Study participants were drawn from the records of children diagnosed with one of these conditions in the years 1998-2006 at the Weinberg Child Development Center, Israel. Data regarding paternal age distribution in the general Israeli population were drawn from the yearly official publications of the Central Bureau of Statistics, Israel. Paternal age at the child's birth was found for autism spectrum disorders children (n = 268) and attention deficit hyperactivity disorders children (n = 320). Paternal age distribution of the attention deficit hyperactivity disorder children was similar to that of the general population in Israel, whereas autism spectrum disorders children were born to older fathers, compared with either the general population ($P < 0.001$) or children with attention deficit hyperactivity disorder ($P=0.04$). These results support the claim that increased paternal age is associated with a birth of a child with autism spectrum disorders, but indicate that this finding cannot be generalized to attention deficit hyperactivity disorder.

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European Child & Adolescent Psychiatry. 2010 Sep;19:715-24.

NEUROFEEDBACK TRAINING IN CHILDREN WITH ADHD: 6-MONTH FOLLOW-UP OF A RANDOMISED CONTROLLED TRIAL.

Gevensleben H, Holl B, Albrecht B, et al.

Neurofeedback (NF) could help to improve attentional and self-management capabilities in children with attention-deficit/hyperactivity disorder (ADHD). In a randomised controlled trial, NF training was found to be superior to a computerised attention skills training (AST) (Gevensleben et al. in J Child Psychol Psychiatry 50(7):780–789, 2009). In the present paper, treatment effects at 6-month follow-up were studied. 94 children with ADHD, aged 8–12 years, completed either 36 sessions of NF training (n = 59) or a computerised AST (n = 35). Pre-training, post-training and follow-up assessment encompassed several behaviour rating scales (e.g., the German ADHD rating scale, FBB-HKS) completed by parents. Follow-up information was analysed in 61 children (ca. 65%) on a per-protocol basis. 17 children (of 33 dropouts) had started a medication after the end of the training or early in the follow-up period. Improvements in the NF group (n = 38) at follow-up were superior to those of the control group (n = 23) and comparable to the effects at the end of the training. For the FBB-HKS total score (primary outcome measure), a medium effect size of 0.71 was obtained at follow-up. A reduction of at least 25% in the primary outcome measure (responder criterion) was observed in 50% of the children in the NF group. In conclusion, behavioural improvements induced by NF training in children with ADHD were maintained at a 6-month follow-up. Though treatment effects appear to be limited, the results confirm the notion that NF is a clinically efficacious module in the treatment of children with ADHD.

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Acta Paediatr Int J Paediatr. 2010;99:1536-39.

ADHD SYMPTOMS AND MATURITY-A FOLLOW-UP STUDY IN SCHOOL CHILDREN.

Gustafsson P, Holmstrom E, Besjakov J, et al.

Aim: To test the hypothesis that there is a subgroup of children with attention deficit hyperactivity disorder (ADHD) who show a decline in ADHD-symptoms that is associated with signs of biological maturation, a phenomenon referred to as a 'maturation catch-up'.

Methods: The parents of 147 children who were given an examination in grades one and two 1999-2000 that included assessment of ADHD-symptoms and estimation of skeletal bone-age by use of hand radiographs (which was repeated in the eighth grade), were contacted 2008-2009 and were asked to answer questions concerning ADHD-symptoms and behavioural maturity in their children. The response frequency was 67%. A complete dataset was achieved in 57 children. A reduction of Conners scores for ADHD-symptoms of eight or more between the evaluations was defined as a marked reduction in symptoms.
Results: When the children with a marked symptom reduction (n = 6) were compared with children without such a reduction (n = 51), we found a significant difference in skeletal maturation ($p < 0.05$).
Conclusion: This study gives support to the theory that there is a group of children with ADHD-symptoms who have a biological maturational-lag who will show a decrease in their ADHD-symptoms as they show a maturation catch-up with increasing age.

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Acta Paediatr Int J Paediatr. 2010;99:1540-49.

EPA SUPPLEMENTATION IMPROVES TEACHER-RATED BEHAVIOUR AND OPPOSITIONAL SYMPTOMS IN CHILDREN WITH ADHD.

Gustafsson PA, Birberg-Thornberg U, Duchen K, et al.

Aim: Measure efficacy of eicosapentaenoic acid (EPA) in children with attention deficit hyperactivity disorder (ADHD).
Methods: Randomized controlled trial (RCT) of 0.5 g EPA or placebo (15 weeks) in 92 children (7-12 years) with ADHD. Efficacy measure was Conners' Parent/Teacher Rating Scales (CPRS/CTRS). Fatty acids were analysed in serum phospholipids and red blood cell membranes (RBC) at baseline and endpoint with gas chromatography.
Results: EPA improved CTRS inattention/cognitive subscale ($p = 0.04$), but not Conners' total score. In oppositional children (n = 48), CTRS total score improved (greater-than or equal to)25% in 48% of the children receiving EPA vs. 9% for placebo [effect size (ES) 0.63, $p = 0.01$]. In less hyperactive/impulsive children (n = 44), (greater-than or equal to)25% improvement was seen in 36% vs. 18% (ES 0.41, n.s.), and with both these types of symptoms 8/13 with EPA vs. 1/9 for placebo improved (greater-than or equal to)25% ($p = 0.03$). Children responding to treatment had lower EPA concentrations ($p = 0.02$), higher AA/EPA ($p = 0.005$) and higher AA/DHA ratios ($p = 0.03$) in serum at baseline. Similarly, AA/EPA ($p = 0.01$), AA/DHA ($p = 0.038$) and total omega-6/omega-3 ratios ($p = 0.028$) were higher in RBC, probably because of higher AA ($p = 0.011$).
Conclusion: Two ADHD subgroups (oppositional and less hyperactive/impulsive children) improved after 15-week EPA treatment. Increasing EPA and decreasing omega-6 fatty acid concentrations in phospholipids were related to clinical improvement.

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J Autism Dev Disord. 2010;40:1006-16.

ANXIETY SYMPTOMS IN BOYS WITH AUTISM SPECTRUM DISORDER, ATTENTION-DEFICIT HYPERACTIVITY DISORDER, OR CHRONIC MULTIPLE TIC DISORDER AND COMMUNITY CONTROLS.

Guttmann-Steinmetz S, Gadow KD, DeVincent CJ, et al .

We compared symptoms of generalized anxiety disorder (GAD) and separation anxiety disorder (SAD) in 5 groups of boys with neurobehavioral syndromes: attention-deficit/hyperactivity disorder (ADHD) plus autism spectrum disorder (ASD), ADHD plus chronic multiple tic disorder (CMTD), ASD only, ADHD only, and community Controls. Anxiety symptoms were assessed using parent and teacher versions of a DSM-IV-referenced rating scale. All three groups of boys with co-morbid ADHD evidenced more severe anxiety than Controls. Group differences in anxiety varied as a function of symptom, disorder, informant, and co-morbidity supporting the notion that co-

morbid neurobehavioral syndromes differentially impact clinical features of co-occurring anxiety symptoms. Findings also suggest that GAD and SAD are phenomenologically unique, even in children with ASD. Implications for nosology are discussed.

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Journal of Child Psychology and Psychiatry. 2010 Sep;51:1058-66.

MOTHER-CHILD DYADIC SYNCHRONY IS ASSOCIATED WITH BETTER FUNCTIONING IN HYPERACTIVE INATTENTIVE PRESCHOOL CHILDREN.

Healey DM, Gopin CB, Grossman BR, et al.

Background: Hyperactive inattentive (HI) behaviors are common in preschoolers, but they result in functional impairment and attention deficit hyperactivity disorder (ADHD) diagnoses in only some children. We examined whether the quality of mother-child interaction accounts for variance in level of functioning among preschool children with elevated ADHD symptoms.

Method: Parent and teacher ADHD-RS ratings were used to assess 126 HI preschoolers, and clinician Children's Global Assessment Scale (CGAS) ratings were used to quantify level of functioning. Mother-child interactions during a 5-minute free-play and a 5-minute structured task were coded for child, parent and dyadic behaviors.

Results: Partial correlations, controlling for symptom severity and IQ, revealed child and dyad factors that were related to children's functioning. Regression analyses revealed that low dyadic synchrony accounted for additional unique variance in children's functioning, above and beyond the influence of symptom severity and IQ.

Conclusions: Dyadic synchrony between mother and child plays a role in the functioning of preschool children displaying elevated symptoms of hyperactivity inattention, and may represent a potential area for intervention that is not generally addressed in most parent management training programs.

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Z Psych Psychol Psychother. 2010;58:299-308.

COMPONENTS OF INTELLIGENCE AND ATTENTION IN BOYS WITH ADHD.

Hellwig-Brida S, Daseking M, Petermann F, et al.

In the present study we compared the performance of boys with ADHD with the norms from the general population. We measured the performance of 85 boys with newly diagnosed ADHD aged 6 to 13 in the Working Memory Index and the Processing Speed Index of the German version of the Wechsler Intelligence Scale for Children (WISC-IV) as well as the performance of 68 of those children (aged 6 to 10) in the Test of Attentional Performance for Children (KITAP). Additionally to the comparison between the results of the complete sample with the standardization data we conducted analyses for children with the Combined and the Primarily Hyperactive subtypes and children with the Primarily Inattentive subtype separately. The children showed deficits in working memory, stability of reaction time, inhibition, cognitive flexibility, sustained attention and divided attention with effect sizes lying in the moderate to large range. Differences to the norm in processing speed were shown only in the group of children with the Primarily Inattentive subtype. In all investigated parameters a maximum of 50% of children showed performance below average.

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Acad Pediatr. 2010;10:252-59.

IS DEVELOPMENTAL AND BEHAVIORAL PEDIATRICS TRAINING RELATED TO PERCEIVED RESPONSIBILITY FOR TREATING MENTAL HEALTH PROBLEMS?

Horwitz SM, Caspary G, Storfer-Isser A, et al.

Objective: The aim of this study was to investigate training in developmental and behavioral pediatrics (DBP) for graduating residents, their competencies in diagnosing and treating child mental health (MH) problems, and whether the amount of DBP training and/or perceived competencies are associated with perceived responsibility for treating 3 MH problems.

Methods: Data were collected from 636 residents who completed the American Academy of Pediatrics's 2007 Graduating Residents Survey. The survey included questions on training and self-rated competencies in multiple MH skill areas and perceived responsibility for identifying and treating/managing children's MH problems. Weighted multivariable logistic regression analyses examined associations between training, competencies, and perceived responsibility for treating/managing attention-deficit/hyperactivity disorder (ADHD), anxiety, and depression.

Results: Ninety percent of respondents completed a DBP rotation, with 86% reporting >3 to 4 weeks of training. Duration of DBP rotation was related to training and perceived competencies in MH skill areas, and nearly all residents who reported high competencies were trained in those skill areas. However, <50% reported their competencies as "very good" or "excellent." Residents with training and high competency in dosing with medications were most likely to agree that pediatricians should be responsible for treating/managing ADHD, anxiety, and depression.

Conclusions: DBP training is highly associated with self-rated MH competencies, and highly assessed competencies are related to perceived responsibility for treating/managing common MH problems; yet 14% of graduating residents have <3 to 4 weeks of DBP training. These results argue for providing more high-quality educational experience with proven effectiveness to produce confident pediatricians who will be more responsive to identifying and treating MH problems of their patients.

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J Child Adolesc Psychopharmacol. 2010 Jun;20:229-31.

PULMONARY ARTERIAL HYPERTENSION IN AN ADOLESCENT TREATED WITH METHYLPHENIDATE.

Karaman MG, Atalay F, Tufan AE, et al.

Presents a case report of a 15-year old boy with attention-deficit/hyperactivity disorder (ADHD) who developed pulmonary arterial hypertension (PAH) during osmotic release oral system (OROS) methylphenidate (MPH) treatment. To our knowledge, this is the first case of PAH probably associated with the therapeutic use of OROS MPH in an adolescent. The patient was a 15-year-old male who was first seen at age 13 at an outpatient child and adolescent psychiatry clinic in Zonguldak, Turkey. He was brought in by his biological mother with the complaints of oppositional behaviors, hyperactivity, inattention, and school failure. He remained on a stable dose of OROS MPH 54 mg/day in the morning for the past 18 months, with significant symptomatic and functional improvement of ADHD. While receiving treatment, the patient consulted with the pediatrics department, but examinations revealed no problems. Vital signs were within normal ranges during the treatment period. In conclusion, this case shows that PAH should be considered in patients who present with dyspnea and a reduced exertion tolerance and who are known to use MPH.

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Journal of Attention Disorders. 2010 Sep;14:121-31.

SHARED AND NONSHARED SYMPTOMS IN YOUTH-ONSET PSYCHOSIS AND ADHD.

Karatekin C, White T, Bingham C.

Objective: We compared ratings of behavior and attention problems between youth-onset psychosis and ADHD, two disorders in which attentional impairments play a key role, and examined the effect of psychostimulant use on age of onset in psychosis.

Method: Parent and teacher ratings of behavioral problems and ADHD symptoms were collected using the Achenbach CBCL, TRF, and SNAP-IV Teacher Rating Scales on 42 participants with psychosis, 36 with ADHD and 57 controls (ages 8-19).

Results and Conclusions: Results suggested that academic, externalizing, and attention problems reflect symptoms shared between the disorders, whereas internalizing, social and thought problems reflect factors that differ between disorders. Furthermore, participants with psychosis who had been prescribed psychostimulants had a younger age of onset of psychotic symptoms than those who had not. This difference could reflect dissimilarities in symptom severity between subgroups or potentially harmful effects of psychostimulants in individuals predisposed to develop psychosis.

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J Psychiatry Neurosci. 2010;35:330-36.

REGIONAL DIFFERENCES IN CEREBRAL PERFUSION ASSOCIATED WITH THE <-2A-ADRENERGIC RECEPTOR GENOTYPES IN ATTENTION DEFICIT HYPERACTIVITY DISORDER.

Kim BN, Kim JW, Kang H, et al.

Background: Neurobiologic studies have suggested that dysregulation of central noradrenergic systems may be involved in the pathophysiology of attention deficit hyperactivity disorder (ADHD), and it has been hypothesized that genetic changes in the norepinephrine pathways might contribute to dysfunction of the prefrontal cortex circuits in ADHD. We previously reported decreased cerebral blood flow in the right lateral prefrontal cortex and both orbitofrontal cortices in children with ADHD. Genetic investigations have shown that the (alpha)-2A-adrenergic receptor gene (ADRA2A) is associated with ADHD. Our aim was to examine whether the presence of a risk allele of the ADRA2A MspI polymorphism is associated with differences in regional cerebral blood flow in boys with ADHD.

Methods: We recruited 21 Korean boys with ADHD (mean age 9.9, standard deviation [SD] 2.7 yr) and 11 age- and sex-matched controls (mean age 10.6 [SD 2.1] yr). Each participant underwent technetium-99m-hexamethylpropylene amine oxime (99mTc-HMPAO) single-photon emission computed tomography. We performed image analyses with voxel-wise t statistics using SPM2.

Results: We found regional hypoperfusion in the prefrontal regions, including the right orbitofrontal and right medial gyri, and the bilateral putamen and cerebellum in boys with ADHD relative to controls ($p < 0.0005$, uncorrected for multiple comparisons). Boys with ADHD who carried the C allele ($n = 13$) at the ADRA2A MspI polymorphism had reduced perfusion in the bilateral orbitofrontal regions compared with those without the C allele ($n = 8$) ($p < 0.0005$, uncorrected for multiple comparisons).

Limitations: This study was limited by the small sample size, and we did not obtain gen - etic data from the controls.

Conclusion: Our findings suggest that regional differences in cerebral perfusion in the orbitofrontal cortex represent an intermediate neuroimaging phenotype associated with the ADRA2A MspI polymorphism; these data support the validity of the noradrenergic hypothesis regarding the pathophysiology of ADHD.

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Psychiatry Res Neuroimaging. 2010;183:230-36.

STRUCTURAL AND FUNCTIONAL IMAGING APPROACHES IN ATTENTION DEFICIT/HYPERACTIVITY DISORDER: DOES THE TEMPORAL LOBE PLAY A KEY ROLE?

Kobel M, Bechtel N, Specht K, et al.

Attention deficit/hyperactivity disorder (ADHD) is characterized by widespread structural and functional abnormalities in the brain. We applied different structural imaging techniques such as voxel-based morphometry (VBM), diffusion tensor imaging (DTI), and magnetization transfer imaging (MTI) to study anatomical differences between boys with ADHD and healthy controls, as well as functional magnetic resonance imaging (fMRI) together with independent component analysis (ICA) to detect functional alterations. 14 boys with ADHD and 12 controls were included in our study. Results of DTI showed the expected differences in frontal and cerebellar white matter. VBM and MTI indicated group differences in the temporal lobe. Applying ICA to fMRI data, we extracted four components; two positively correlated to our working memory paradigm and two negatively correlated. Positive components included activation in frontal and parietal regions. Negative components showed activation in anterior and posterior cingulate cortex/precuneus and temporal regions, and were interpreted as forming part of the default mode network. Group differences in the inferior temporal lobe were detected. Applying different techniques, we found differences between boys with ADHD and controls mainly located in the temporal lobe. Therefore, we postulate that research on ADHD should broaden its scope by including the temporal lobe as a potentially important locus of abnormalities in ADHD.

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Journal of Attention Disorders. 2010 Sep;14:167-81.

Girls with social and/or attention deficits: A descriptive study of 100 clinic attenders.

Kopp S, Berg Kelly K, Gillberg C.

Objective: Examine clinical correlates and distinguishing features of autism spectrum disorders (ASD), ADHD, and tic disorders in girls referred for social impairment, attention/academic deficits, and/or tics.

Method: One hundred 3- to 18-year-old girls referred for social impairment and attention symptoms were assessed in detail. Sixty of these girls, 7 to 16 years of age (IQ = 80) were compared with age-matched girls (IQ = 80) from the community.

Results: Main diagnoses of ASD, ADHD, tic disorders, and “other psychiatric disorder” were made in 46, 46, 3, and 5, respectively, of the referred girls. The ASD and ADHD groups (mean age at diagnosis 8.8 and 13.0 years, respectively) had the same types and high rates of psychiatric comorbidity. Girls with ASD had more problems with global functioning and adaptive levels of daily living skills than girls with ADHD. Differences between these girls referred for investigation and the community sample of girls were very considerable across a range of factors.

Conclusions: Girls referred for social and/or attention deficits usually meet diagnostic criteria for either ASD or ADHD. They have severe psychiatric comorbidities and low global levels of functioning.

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Biol Psychiatry. 2010;68:352-58.

INCREASED ECHOGENICITY OF THE SUBSTANTIA NIGRA IN CHILDREN AND ADOLESCENTS WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.

Krauel K, Feldhaus HC, Simon A, et al.

Background: Recent neurobiological models on attention-deficit/ hyperactivity disorder (ADHD) as well as findings from imaging studies suggest a crucial involvement of dopaminergic midbrain nuclei, especially the substantia nigra (SN), in the pathogenesis of ADHD symptoms. The current

study aimed to investigate whether alterations in the sonographic features of the SN could serve as a biological marker in ADHD patients.
Methods: The current study employed transcranial sonography in 29 children and adolescents with ADHD and 27 healthy control participants to assess midbrain abnormalities in ADHD.
Results: The ADHD patients showed an increase in echogenic size of the SN that was correlated with symptoms of inattention, hyperactivity, and impulsivity but not oppositional or dissocial symptoms. Hyperechogenicity, defined as echogenic size above the 90th percentile in the control group, was present in 48% of ADHD patients.
Conclusions: Our findings indicate an increased vulnerability of the nigrostriatal system in ADHD. Transcranial sonography could be successfully used in the future to explore whether ADHD patients with distinct SN hyperechogenicity constitute a specific subgroup or whether hyperechogenicity relates functionally to differences in reward processing, learning, and motor function.

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Journal of Child Psychology and Psychiatry. 2010 Aug;51:895-904.
Validating neuropsychological subtypes of ADHD: How do children with and without an executive function deficit differ?
Lambek R, Tannock R, Dalsgaard S, et al.
Objective: The study investigates behavioural, academic, cognitive, and motivational aspects of functioning in school-age children with attention-deficit/hyperactivity disorder (ADHD) with and without an executive function deficit (EFD).
Method: Children with ADHD—EFD (n = 22) and children with ADHD + EFD (n = 26) were compared on aspects of ADHD behaviour, school functioning, general cognitive ability, intra-individual response variability, affective decision-making, and delay aversion.
Results: Children with ADHD—EFD and children with ADHD + EFD were comparable in terms of ADHD symptomatology and school functioning. However, children with ADHD + EFD had significantly lower IQ and more intra-individual response variability than no EFD counterparts. Children with ADHD alone appeared more delay averse on the C-DT task than children with ADHD + EFD.
Conclusions: Some children with ADHD were primarily characterised by problems with executive functions and variability others by problems with delay aversion supporting multiple pathway models of ADHD. Given the exploratory nature of the study, results are in need of replication.

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Dev Med Child Neurol. 2010;52:e202-e208.
NO ASSOCIATION BETWEEN THE 2D:4D FETAL TESTOSTERONE MARKER AND MULTIDIMENSIONAL ATTENTIONAL ABILITIES IN CHILDREN WITH ADHD.
Lemiere J, Boets B, Danckaerts M.
Aim: It has been suggested that high levels of prenatal testosterone exposure are implied in the aetiology of attention-deficit-hyperactivity disorder (ADHD). This study examined the association between the ratio of the length of the second and fourth digits (2D:4D ratio), a marker of fetal testosterone exposure, and the presence of ADHD-related cognitive and behavioural problems in children with ADHD and in typically developing comparison individuals.
Method: A clinically referred group of 64 children who fulfilled DSM-IV-TR criteria for ADHD (47 males, 17 females; mean age 8y 8mo, SD 1y 8mo, range 7-12y) and 46 comparison children (25 males, 21 females; mean age 9y 2mo; SD 1y 10mo, range 7-12y) were included in the study. The length of the second and fourth digits was measured by two independent raters. The Child Behaviour Checklist (CBCL) and the Test of Everyday Attention for Children (TEA-Ch) were used to assess behavioural problems and different aspects of attention.

Results: No group differences in 2D:4D ratio were observed between children with (combined, inattentive, or hyperactive-impulsive subtype of) ADHD and comparison children. The ratio did not show the postulated relation with cognitive and behavioural aspects of ADHD.
Interpretation: These findings challenge the hypothesis that fetal testosterone exposure plays a prominent role in the aetiology of ADHD.

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European Child & Adolescent Psychiatry. 2010 Aug;19:679-85.

ARE CHILDREN WITH ADHD PREDOMINANTLY INATTENTIVE AND COMBINED SUBTYPES DIFFERENT IN TERMS OF ASPECTS OF EVERYDAY ATTENTION?

Lemiere J, Wouters H, Sterken C, et al.

The validity of the DSM-IV subtypes is a recurring diagnostic debate in attention deficit/hyperactivity disorder (ADHD). Laboratory measures, such as the test of everyday attention for children (TEA-Ch) can help us address this question. TEA-Ch is a test battery covering different aspects of everyday attention relating to selective and sustained attention and attentional control. The aim of the current study was to investigate whether this instrument can differentiate between combined (ADHD-C) and inattentive subtype (ADHD-I) of ADHD. Subjects were recruited from a multidisciplinary ADHD outpatient unit and tested free of medication. Sixty-four children with a diagnosis of ADHD were included (38 with ADHD-C; 26 with ADHD-I). The control group was 76 children recruited from primary and secondary schools. Children with ADHD performed worse than controls on 6 out of 9 TEA-Ch subtests. However a regression analysis revealed that TEA-Ch subtests made only a marginal contribution to the correct classification of ADHD, once the effects of IQ and age are controlled. Confirmatory factor analysis in our ADHD group demonstrated that the three factor structure achieved a poor fit. More detailed analysis suggested that inferior performance on the tasks designed to test vigilance was not the result of deficient-sustained attention. ADHD-C and ADHD-I showed very few differences across tasks. In conclusion, our results provided not much support for the value of the ADHD-C and ADHD-I distinction in predicting difficulties in everyday attention.

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Child Neuropsychol. 2010 Sep;16:494-502.

DO ADHD AND EXECUTIVE DYSFUNCTIONS, MEASURED BY THE HEBREW VERSION OF BEHAVIORAL RATING INVENTORY OF EXECUTIVE FUNCTIONS (BRIEF), COMPLETELY OVERLAP?

Linder N, Kroyzer N, Maeir A, et al.

The centrality of executive function deficits (EFD) in attention deficit/hyperactivity disorder (ADHD) is well accepted albeit EFD is not synonymous with ADHD. The purpose of the present study was to examine the extent to which ADHD and EF overlap and to validate the Hebrew version of the Behavioral Rating Inventory of Executive Functions (BRIEF). Parents of 178 children with and without ADHD completed the BRIEF and the ADHD-Rating Scale. Significant differences were found between groups on each scale even after controlling for the other scale. Internal consistency analysis supported the reliability of the Hebrew version of the BRIEF. We conclude that ADHD and Executive Dysfunctions do not completely overlap.

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International Journal of Clinical and Health Psychology. 2010 Sep;10:499-517.

USO DEL MATCHING FAMILIAR FIGURES TEST 20 EN EL DIAGNÓSTICO DE NIÑOS CON TRASTORNO POR DÉFICIT DE ATENCIÓN CON HIPERACTIVIDAD.

López-Villalobos JA, Serrano-Pintado I, Delgado-Sánchez-Mateos J, et al.

The descriptive study focused on the differences among patients with Attention Deficit Hyperactivity Disorder (ADHD) and controls, in relation to cognitive impulsivity and to find the best model based in Matching Familiar Figures Test 20 (MFFT-20) which permits to predict and to diagnose ADHD, analyzing the validity of the test for the diagnostic of the disease. Ex post facto study. We study 100 ADHD cases (DSM-IV criteria) and 100 controls, ranging between 7 and 11 years of age, analyzed with MFFT-20. Controls were randomly recruited and matched by age, gender and sociodemography area with cases. Cases show an average cognitive style significantly more impulsive (effect size d = 1.29) with a smaller sum of latencies (effect size d = .71) and a bigger sum of errors (effect size d = 2.20). The logistic regression model that best predicts ADHD in constituted by age and errors score of MFFT-20. The derived formula from the model shows a 80% of sensivity and a 80% of specificity for ADHD, regarding as gold standard the DSM-IV criteria. MFFT-20 test shows indicators of appropriate validity for diagnose in ADHD, contributing to increase the objectivity in his analysis.

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J Child Adolesc Psychopharmacol. 2010;20:283-89.

TESTING TIC SUPPRESSION: COMPARING THE EFFECTS OF DEXMETHYLPHENIDATE TO NO MEDICATION IN CHILDREN AND ADOLESCENTS WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER AND TOURETTE'S DISORDER.

Lyon GJ, Samar SM, Conelea C, et al.

Objective: The aim of this study was to conduct a pilot study testing whether single-dose, immediate-release dexmethylphenidate (dMPH) can facilitate tic suppression in children and adolescents with attention-deficit/hyperactivity disorder (ADHD) and Tourette's disorder (TD) or chronic tic disorders. The primary hypothesis is that dMPH will improve behaviorally reinforced tic suppression in a standard tic suppression paradigm (TSP).

Methods: Ten children with ADHD and TD were given dMPH on one visit and no medication on another, using a random crossover design. On both days, following a baseline period, subjects were reinforced for suppressing tics using a standard TSP.

Results: Thirteen subjects were enrolled; 10 subjects (mean age 12.7(plus or minus)2.6; 90% male) completed all study procedures. Relative to the no-medication condition, tics were reduced when children were given a single dose of dMPH. Behavioral reinforcement of tic suppression resulted in lower rates of tics compared to baseline, but dMPH did not enhance this suppression.

Conclusion: Preliminary results indicate replication of prior studies of behavioral tic suppression in youths with TD and without ADHD. In addition, our findings indicate tic reduction (and not tic exacerbation) with acute dMPH challenge in children and adolescents with ADHD and TD.

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Journal of Child Psychology and Psychiatry. 2010 Aug;51:905-14.

REVISITING THE LATENT STRUCTURE OF ADHD: IS THERE A 'G' FACTOR?

Martel MM, Von Eye A, Nigg JT.

Background: Attention-deficit/hyperactivity disorder (ADHD) is presumed to be heterogeneous, but the best way to describe this heterogeneity remains unclear. Considerable evidence has accrued suggesting that inattention versus hyperactivity-impulsivity symptom domains predict distinct clinical outcomes and may have partially distinct etiological influence. As a result, some conceptualizations emphasize two distinct inputs to the syndrome. Yet formal testing of models

that would accommodate such assumptions using modern methods (e.g., second-order factor and bifactor models) has been largely lacking.
Methods: Participants were 548 children (321 boys) between the ages of 6 and 18 years. Of these 548 children, 302 children met DSM-IV criteria for ADHD, 199 were typically developing controls without ADHD, and 47 were classified as having situational or subthreshold ADHD. ADHD symptoms were assessed via parent report on a diagnostic interview and via parent and teacher report on the ADHD Rating Scale.
Results: A bifactor model with a general factor and specific factors of inattention and hyperactivity-impulsivity fit best when compared with one-, two-, and three-factor models, and a second-order factor model.
Conclusions: A bifactor model of ADHD latent symptom structure is superior to existing factor models of ADHD. This finding is interpreted in relation to multi-component models of ADHD development, and clinical implications are discussed.

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Journal of Clinical Child and Adolescent Psychology. 2010 Sep;39:650-66.
INCREMENTAL VALIDITY OF TEST SESSION AND CLASSROOM OBSERVATIONS IN A MULTIMETHOD ASSESSMENT OF ATTENTION DEFICIT/HYPERACTIVITY DISORDER.
McConaughy SH, Harder VS, Antshel KM, et al.
This study tested the incremental validity of behavioral observations, over and above parent and teacher reports, for assessing symptoms of Attention Deficit/Hyperactivity Disorder (ADHD) in children ages 6 to 12, using the Test Observation Form (TOF) and Direct Observation Form (DOF) from the Achenbach System of Empirically Based Assessment. The TOF Attention Problems and DOF Intrusive scales contributed significant unique variance, over and above parent and teacher ratings, to predicting parent and teacher ratings of hyperactivity and impulsivity and predicting categorical diagnoses of ADHD-Combined type versus Non-ADHD and ADHD-Combined type versus ADHD-Predominantly Inattentive type. The TOF Oppositional and Attention Deficit/Hyperactivity Problems scales contributed unique variance to predicting parent ratings of hyperactivity and impulsivity and the DOF Oppositional and Attention Deficit/Hyperactivity Problems scales contributed unique variance to predicting teacher ratings of hyperactivity and impulsivity.

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J Am Acad Child Adolesc Psychiatry. 2010;49:898-905.
FAMILY-BASED GENOME-WIDE ASSOCIATION SCAN OF ATTENTION-DEFICIT/ HYPERACTIVITY DISORDER.
Mick E, Todorov A, Smalley S, et al.
Objective: Genes likely play a substantial role in the etiology of attention-deficit/hyperactivity disorder (ADHD). However, the genetic architecture of the disorder is unknown, and prior genome-wide association studies (GWAS) have not identified a genome-wide significant association. We have conducted a third, independent, multisite GWAS of DSM-IV-TR ADHD.
Method: Families were ascertained at Massachusetts General Hospital (MGH; N = 309 trios), Washington University at St. Louis (WASH-U; N = 272 trios), and University of California at Los Angeles (UCLA; N = 156 trios). Genotyping was conducted with the Illumina Human1M or Human1M-Duo BeadChip platforms. After applying quality control filters, association with ADHD was tested with 835,136 SNPs in 735 DSM-IV ADHD trios from 732 families.
Results: Our smallest p value (6.7E-07) did not reach the threshold for genome-wide statistical significance (5.0E-08), but one of the 20 most significant associations was located in a candidate gene of interest for ADHD (SLC9A9, rs9810857, p = 6.4E-6). We also conducted gene-based tests of candidate genes identified in the literature and found additional evidence of association with SLC9A9.

Conclusions: We and our colleagues in the Psychiatric GWAS Consortium are working to pool together GWAS samples to establish the large data sets needed to follow-up on these results and to identify genes for ADHD and other disorders.

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J Psychopathol Behav Assess. 2010;32:323-32.

IMPULSIVITY AND ATTENTION DEFICIT-HYPERACTIVITY DISORDER: SUBTYPE CLASSIFICATION USING THE UPPS IMPULSIVE BEHAVIOR SCALE.

Miller DJ, Derefinko KJ, Lynam DR, et al.

This study examined the classification accuracy of the UPPS Impulsive Behavior Scale (UPPS) in discriminating several attention deficit/hyperactivity disorder (ADHD) subtypes, including predominantly inattentive type (ADHD/I), combined type (ADHD/C), and combined type with behavioral problems (ADHD/ODD), between each other and a non-ADHD control group using logistic regression analyses. The sample consisted of 88 children ranging in age from 9.0 years to 12.8 years, with a mean of 10.9 years. Children were predominantly male (74%) and Caucasian (86%) and in grades 3-7. Results indicated that the UPPS performed well in classifying ADHD subtypes relative to traditional diagnostic measures. In addition, analyses indicated that differences in symptoms between subtypes can be explained by specific pathways to impulsivity. Implications for the assessment of ADHD and conceptual issues are discussed.

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Journal of Psychoeducational Assessment. 2010 Aug;28:349-56.

RESILIENCE AND IMPAIRMENT: AN EXPLORATORY STUDY OF RESILIENCE FACTORS AND SITUATIONAL IMPAIRMENT.

Naglieri JA, Goldstein S, LeBuffe P.

The purpose of this study was to begin to examine the relationships between social emotional factors related to resilience as measured by the Devereux Student Strengths Assessment (DESSA) and the degree of impairment as reflected in problem behaviors reported by parents according to the Home Situations Questionnaire (HSQ). A second goal was to study the relationships between impairment as measured by the HSQ with intelligence as measured by the Wechsler Intelligence Scale for Children–Fourth Edition (WISC-IV) and the Cognitive Assessment System (CAS). The participants were 49 children (76% males; all White; aged 6-14 years; mean = 8.9, SD = 2.0), evenly distributed among those diagnosed with attention deficit hyperactive disorder (ADHD) Inattentive, ADHD Combined type, ADHD Not Otherwise Specified, learning disabilities, mild mental retardation, depression, and combined depression and ADHD. The DESSA T score was 38.6, suggesting that this group of referred children were low in social-emotional protective factors. The WISC-IV Full Scale IQ was 96.8, with scores ranging from 87.7 on Processing Speed to 102.5 on Verbal Comprehension, and the CAS Full Scale was 94.5, with scores ranging from 90.9 in Planning to 100.4 in both Simultaneous and Successive processing abilities. Seven of the eight DESSA scales correlated significantly with the HSQ, as did the Social-Emotional Composite (r = -.53); lower social-emotional competence scores DESSA were associated with higher degrees of impairment in home situations. In contrast, none of the WISC-IV or CAS scales were significantly correlated with the HSQ.

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J Am Acad Child Adolesc Psychiatry. 2010;49:906-20.

CASE-CONTROL GENOME-WIDE ASSOCIATION STUDY OF ATTENTION-DEFICIT/ HYPERACTIVITY DISORDER.

Neale BM, Medland S, Ripke S, et al.

Objective: Although twin and family studies have shown attention-deficit/ hyperactivity disorder (ADHD) to be highly heritable, genetic variants influencing the trait at a genome-wide significant level have yet to be identified. Thus additional genomewide association studies (GWAS) are needed.

Method: We used case-control analyses of 896 cases with DSM-IV ADHD genotyped using the Affymetrix 5.0 array and 2,455 repository controls screened for psychotic and bipolar symptoms genotyped using Affymetrix 6.0 arrays. A consensus SNP set was imputed using BEAGLE 3.0, resulting in an analysis dataset of 1,033,244 SNPs. Data were analyzed using a generalized linear model.

Results: No genome-wide significant associations were found. The most significant results implicated the following genes: PRKG1, FLNC, TCERG1L, PPM1H, NXPH1, PPM1H, CDH13, HK1, and HKDC1.

Conclusions: The current analyses are a useful addition to the present literature and will make a valuable contribution to future meta-analyses. The candidate gene findings are consistent with a prior meta-analysis in suggesting that the effects of ADHD risk variants must, individually, be very small and/or include multiple rare alleles.

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J Neurother. 2010;14:229-42.

EFFECTS OF NEUROFEED BACK TRAINING ON INHIBITORY CAPACITIES IN ADHD CHILDREN: A SINGLE-BLIND, RANDOMIZED, PLACEBO-CONTROLLED STUDY.

Perreau-Linck E, Lessard N, Levesque J, et al.

Introduction. Studies performed during the last decades suggest that neurofeedback (NF) training can effectively reduce symptomatology in children with Attention deficit hyperactivity disorder (ADHD). Yet questions remain concerning specific effects of NF training in ADHD children, because these studies did not use a randomized, placebo-controlled approach. To address this issue, such an approach was used in the present study to measure the impact of NF training on inhibitory capacities.

Method. Nine ADHD children (with no comorbidity), aged 8 to 13 years, were randomly assigned to either an experimental group (n1/45) or a placebo group (n1/44). For both groups, training protocols comprised 40 one-hr sessions (20 meetings of 2 sessions each). Sensorimotor rhythm=Theta training was used in the experimental group. Prerecorded sessions of the first author's EEG activity were used in the placebo group. Pre- and posttraining assessments consisted of the Conner's Parent Rating Scales (CPRS-R) and neuropsychological tests. A multiple case study strategy was applied for data analysis using a Reliable Change Index when applicable.

Results. One experimental participant was a dropout, and one placebo participant had to be discontinued due to adverse effects. The latter participant accepted to undergo posttraining evaluations; hence an Intention-to-Treat analysis was performed on this participant's data. Remaining participants showed significant improvements on the CPRS-R. Improvements were measured on the Variability measure of the CPT-II consistently across the placebo group and on the Inhibition Condition of the Stroop Task for all but one placebo participant. The same trend was found for the Inhibition=Switching Condition (Stroop Task) across the experimental group (n1/44).

Conclusion. The small sample size precludes from evaluating specific neurofeedback effects. Still, the presence of placebo responses suggests that other factors, such as motivation or expectations, might contribute to the outcome of NF training in children with ADHD.

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Sleep Med. 2010;11:922-28.

SLEEP DISORDERS AND DAYTIME SLEEPINESS IN CHILDREN WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER: A TWO-NIGHT POLYSOMNOGRAPHIC STUDY WITH A MULTIPLE SLEEP LATENCY TEST.

Prihodova I, Paclt I, Kemlink D, et al.

Objective: To evaluate sleep macrostructure, sleep disorders incidence and daytime sleepiness in attention-deficit/hyperactivity disorder (ADHD) affected children compared with controls.

Methods: Thirty-one patients (26 boys, 5 girls, mean age 9.3 (plus or minus) 1.7, age range 6-12 years) with ADHD diagnosed according to DSM-IV criteria, without comorbid psychiatric or other disorders, as never before pharmacologically treated for ADHD. The controls were 26 age- and sex-matched children (22 boys, 4 girls, age range 6-12 years, mean age 9.2 (plus or minus) 1.5). Nocturnal polysomnography (PSG) was performed for two nights followed by the multiple sleep latency test (MSLT).

Results: No differences between the two groups comparing both nights were found in the basic sleep macrostructure parameters or in the time (duration) of sleep onset. A first-night effect on sleep variables was apparent in the ADHD group. Occurrence of sleep disorders (sleep-disordered breathing [SDB], periodic limb movements in sleep [PLMS], parasomnias) did not show any significant differences between the investigated groups. A statistically significant difference ($p= 0.015$) was found in the trend of the periodic limb movement index (PLMI) between two nights (a decrease of PLMI in the ADHD group and an increase of PLMI in the control group during the second night). While the mean sleep latency in the MSLT was comparable in both groups, children with ADHD showed significant (sleep latency) inter-test differences (between tests 1 and 2, 1 and 4, 1 and 5, $p< 0.01$).

Conclusion: After the inclusion of adaptation night and exclusion of psychiatric comorbidities, PSG showed no changes in basic sleep parameters or sleep timing, or in the frequency of sleep disorders (SDB, PLMS) in children with ADHD compared with controls, thus not supporting the hypothesis that specific changes in the sleep macrostructure and sleep disturbances are connected with ADHD. A first-night effect on sleep variables was apparent only in the ADHD group. Though we found no proof of increased daytime sleepiness in children with ADHD against the controls, we did find significant vigilance variability during MSLT in the ADHD group, possibly a sign of dysregulated arousal.

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Psychol Assess. 2010 Sep;22:546-58.

ATTENTION-DEFICIT/HYPERACTIVITY DISORDER SYMPTOMS IN PRESCHOOL CHILDREN: EXAMINING PSYCHOMETRIC PROPERTIES USING ITEM RESPONSE THEORY.

Purpura DJ, Wilson SB, Lonigan CJ.

Clear and empirically supported diagnostic symptoms are important for proper diagnosis and treatment of psychological disorders. Unfortunately, the symptoms of many disorders presented in the Diagnostic and Statistical Manual of Mental Disorders (4th ed., text rev.; DSM–IV–TR; American Psychiatric Association, 2000) lack sufficient psychometric evaluation. In this study, an item response theory (IRT) analysis was applied to ratings of the 18 attention-deficit/hyperactivity disorder (ADHD) symptoms in 268 preschool children. Children (55% boys, 45% girls) in this sample ranged in age from 37 to 74 months; 80.4% were identified as African American, 15.1% as Caucasian, and 4.5% as other ethnicity. Dichotomous and polytomous scoring methods for rating ADHD symptoms were compared and psychometric properties of these symptoms were calculated. Symptom-level analyses revealed that, in general, the current symptoms provided useful information in diagnosing ADHD in preschool children; however, several symptoms provided redundant information and should be examined further.

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ADHD Attention Deficit and Hyperactivity Disorders. 2010;1-9.

DRUG POLICY AND TREATMENT BIAS DUE TO THE DOPAMINE-DEFICIT THEORY OF CHILD ATTENTION-DEFICIT HYPERACTIVITY DISORDER.

Rastmanesh R.

Abnormal dopamine (DA) transporter functioning has long been suspected to be involved in attention-deficit hyperactivity disorder (ADHD). My extensive search on theories concerning ADHD included: CENTRAL, MEDLINE, EMBASE, CINAHL, ERIC, PsycINFO, Complementary and Alternative Medicine-specific databases, Informit, JST, plus grey literature and trial registries from inception to May 2010. A new understanding of ADHD pathophysiology is required. DA-deficit theory of ADHD is insufficient to cover critical aspects of ADHD pathology and medication. The dominance of this theory discourages the human and financial investments needed to explore alternative theories and has caused an evident bias in health and drug policies. A combined theory of altered DA and serotonin (5HT), deficit DA, and weakened prefrontal cortex (PFC) circuits may serve as a good alternate to DA-theory alone. This combined theory may influence the future of drug polices, pharmaceutical investments, treatment options, and drug developments.

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Child Neuropsychol. 2010 Sep;16:478-93.

CONCURRENT VALIDITY OF THE PEDIATRIC ATTENTION DISORDERS DIAGNOSTIC SCREENER FOR CHILDREN WITH ADHD.

Reddy LA, Newman E, Pedigo TK, et al.

The present study examined the concurrent validity of a new computer-assisted ADHD screening system, the Pediatric Attention Disorders Diagnostic Screener (PADDS; Pedigo, Pedigo, & Scott, 2006) in relation to the Test of Variables of Attention (TOVA; Greenberg, 1999), the Conner's Continuous Performance Test-II (CPT-II; Conners & MHS Staff, 2000), and the Behavior Rating Inventory of Executive Function (BRIEF; Gioia, Isquith, Guy, & Kenworthy, 2000) in three clinically referred samples of children 6 to 12 years of age. The PADDS is a recently published multidimensional screening measure that incrementally merges computer-administered executive tasks with parent and teacher behavior ratings to aid in the diagnostic decision-making process for youth with attention disorders. To date, no published study has examined the concurrent validity of the PADDS. In a clinic-referred sample of 217 subjects diagnosed with ADHD concurrent validity was assessed through correlation coefficients, paired t-tests ($p<.001$), and Cohen's d effect sizes. In comparison to the TOVA, the CPT-II, and the BRIEF scales, the PADDS demonstrated strong concurrent validity between conceptually similar scales, providing initial evidence for the concurrent validity of the PADDS. Relative to other measures, the PADDS appears to have some unique scales designed to assess attention and various aspects of executive functioning.

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Developmental Medicine & Child Neurology. 2010 Aug;52.

IS MOTOR DYSFUNCTION CORE TO AUTISM SPECTRUM DISORDER?

Rinehart N, McGinley J.

Comments on an article, Stability of motor problems among young children with or at risk for autism spectrum disorders, attention-deficit-hyperactivity disorder, and/or developmental coordination disorder by H. Van Waelvelde et al. (2010). This study documented the persistent nature of motor impairments which may present additional challenges to the quality of life of children with autism spectrum disorders (ASD). They reported the unexpected finding that

children who did not receive therapy improved in motor proficiency more than children who did receive therapy. While the authors reasonably consider the plausible possibility that children who received therapy had the poorest prognosis, this clearly highlights the urgent need for further research to elucidate the role and efficacy of interventions. The interesting findings of this study further highlight the need for well-designed prospective longitudinal studies over extended time periods, preferably from large population-based samples.

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J Autism Dev Disord. 2010;40:1017-27.

EXECUTIVE FUNCTIONING IN CHILDREN WITH ASPERGER SYNDROME, ADHD-COMBINED TYPE, ADHD-PREDOMINATELY INATTENTIVE TYPE, AND CONTROLS.

Semrud-Clikeman M, Walkowiak J, Wilkinson A, et al.

The purpose of the study was to evaluate neuropsychological and behavioral rating measures of executive functions (EF) in children with two subtypes of ADHD, Asperger syndrome (AS), and controls. Relative to the control group, the clinical groups experienced more difficulty in EF. The AS group showed the most difficulty in emotional control, behavioral regulation, fluid reasoning, and planning compared to the ADHD groups. Number of symptoms of ADHD or AS was found to be significantly related to ratings of difficulty with behavior regulation, metacognition, and general

behavioral regulation across the sample. These findings indicate that children with AS or ADHD may have a differing EF profile and thus, may respond differentially to interventions.

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Dev Neuropsychol. 2010 Sep;35:582-600.

NEUROPSYCHOLOGICAL DIFFERENCES AMONG CHILDREN WITH ASPERGER SYNDROME, NONVERBAL LEARNING DISABILITIES, ATTENTION DEFICIT DISORDER, AND CONTROLS.

Semrud-Clikeman M, Walkowiak J, Wilkinson A, et al.

Confusion is present as to possible diagnostic differences between Asperger syndrome (AS) and Nonverbal learning disabilities (NLD) and the relation of these disorders to attentional difficulties. Three-hundred and forty-five children participated in this study in 5 groups; NLD, AS, attention deficit hyperactivity disorder (ADHD): Combined type, ADHD: Inattentive type, and controls. The NLD group showed particular difficulty on visual-spatial, visual-motor, and fluid reasoning measures compared to the other groups. There was also a significant verbal-performance IQ split in this group related to difficulty in social functioning. This study extends the findings from previous studies and extends these findings to differences between AS and NLD groups.

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Noropsikiyatr Ars. 2010;47:139-43.

COMORBODITY IN PATIENTS DIAGNOSED WITH ADULT-ATTENTION DEFICIT HYPERACTIVITY DISORDER IN PSYCHIATRY OUTPATIENT CLINICS.

Sevinc E, Sengul C, Cakaloz B, et al.

Objective: Although attention-deficit hyperactivity disorder (ADHD) was perceived as a disorder of childhood, it is now recognized as a chronic condition persisting into adulthood. The aim of this study was to explore the frequency of comorbidity in adults with ADHD.

Methods: 80 ADHD patients between 16 and 60 years of age and 80 controls were recruited to the study. The groups were compared in terms of socio-demographic characteristics and diagnosis based on SCID-I and SCID-II.

Results: The groups were identical regarding socio-demographic characteristics such as age, gender, education and marital status. The frequency of generalized anxiety disorder, major depression, dysthymia, somatoform disorder, antisocial and borderline personality disorders was significantly higher in ADHD group compared to the control group.
Conclusion: We found that adult ADHD was an important risk factor for psychiatric comorbidity throughout lifetime. It is clear that misdiagnosis of comorbid disorders in ADHD patients may cause worsening of the symptoms and treatment resistance. Further studies on this topic may help us to better understand the course of adult ADHD and its treatment.

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Nöropsikiyatri Arsivi/Archives of Neuropsychiatry. 2010 Jun;47:139-43.
PSIKIYATRI POLIKLINIGINDE ERISKIN DIKKAT EKSIKLIGI HIPERAKTIVRTE BOZUKLUGU TANISI KONAN HASTALARDA ESTANI.
Sevinç E, Sengül C, Çakaloz B, et al.
Objective: Although attention-deficit hyperactivity disorder (ADHD) was perceived as a disorder of childhood, it is now recognized as a chronic condition persisting into adulthood. The aim of this study was to explore the frequency of comorbidity in adults with ADHD.
Methods: 80 ADHD patients between 16 and 60 years of age and 80 controls were recruited to the study. The groups were compared in terms of socio-demographic characteristics and diagnosis based on SCID-I and SCID-II.
Results: The groups were identical regarding socio-demographic characteristics such as age, gender, education and marital status. The frequency of generalized anxiety disorder, major depression, dysthymia, somatoform disorder, antisocial and borderline personality disorders was significantly higher in ADHD group compared to the control group.
Conclusion: We found that adult ADHD was an important risk factor for psychiatric comorbidity throughout lifetime. It is clear that misdiagnosis of comorbid disorders in ADHD patients may cause worsening of the symptoms and treatment resistance. Further studies on this topic may help us to better understand the course of adult ADHD and its treatment.

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Journal of Child Psychology and Psychiatry. 2010 Aug;51:915-23.
EMOTIONAL LABILITY IN CHILDREN AND ADOLESCENTS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD): CLINICAL CORRELATES AND FAMILIAL PREVALENCE.
Sobanski E, Banaschewski T, Asherson P, et al.
Background: The goal of this study was to investigate the occurrence, severity and clinical correlates of emotional lability (EL) in children with attention deficit/hyperactivity disorder (ADHD), and to examine factors contributing to EL and familiality of EL in youth with ADHD.
Methods: One thousand, one hundred and eighty-six children with ADHD combined type and 1827 siblings (aged 6–18 years) were assessed for symptoms of EL, ADHD, associated psychopathology and comorbid psychiatric disorders with a structured diagnostic interview (PACS) as well as parent and teacher ratings of psychopathology (SDQ; CPRS-R:L; CTRS-R:L). Analyses of variance, regression analyses, $?^2$-tests or loglinear models were applied.
Results: Mean age and gender-standardized ratings of EL in children with ADHD were >1.5 SD above the mean in normative samples. Severe EL (>75th percentile) was associated with more severe ADHD core symptoms, primarily hyperactive-impulsive symptoms, and more comorbid oppositional defiant, affective and substance use disorders. Age, hyperactive-impulsive, oppositional, and emotional symptoms accounted for 30% of EL variance; hyperactive-impulsive symptoms did not account for EL variance when coexisting oppositional and emotional problems were taken into account, but oppositional symptoms explained 12% of EL variance specifically.

Severity of EL in probands increased the severity of EL in siblings, but not the prevalence rates of ADHD or ODD. EL and ADHD does not co-segregate within families.
Conclusion: EL is a frequent clinical problem in children with ADHD. It is associated with increased severity of ADHD core symptoms, particularly hyperactivity-impulsivity, and more symptoms of comorbid psychopathology, primarily symptoms of oppositional defiant disorder (ODD), but also affective symptoms, and substance abuse. EL in ADHD seems to be more closely related to ODD than to ADHD core symptoms, and is only partly explainable by the severity of ADHD core symptoms and associated psychopathology. Although EL symptoms are transmitted within families, EL in children with ADHD does not increase the risk of ADHD and ODD in their siblings.

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Am J Psychiatry. 2010;167:1108-15.
THE ROLE OF HISTAMINE DEGRADATION GENE POLYMORPHISMS IN MODERATING THE EFFECTS OF FOOD ADDITIVES ON CHILDREN'S ADHD SYMPTOMS.
Stevenson J, Sonuga-Barke E, McCann D, et al.
Objective: Food additives can exacerbate ADHD symptoms and cause nonimmunoglobulin E-dependent histamine release from circulating basophils. However, children vary in the extent to which their ADHD symptoms are exacerbated by the ingestion of food additives. The authors hypothesized that genetic polymorphisms affecting histamine degradation would explain the diversity of responses to additives.
Method: In a double-blind, placebo-controlled crossover trial, challenges involving two food color additive and sodium benzoate (preservative) mixtures in a fruit drink were administered to a general community sample of 3-year-old children (N=153) and 8/9-year-old children (N=144). An aggregate ADHD symptom measure (based on teacher and parent blind ratings of behavior, blind direct observation of behavior in the classroom, and - for 8/9-year-old children only - a computerized measure of attention) was the main outcome variable.
Results: The adverse effect of food additives on ADHD symptoms was moderated by histamine degradation gene polymorphisms HNMT T939C and HNMT Thr105Ile in 3- and 8/9-year-old children and by a DAT1 polymorphism (short versus long) in 8/9-year-old children only. There was no evidence that polymorphisms in catecholamine genes COMT Val108Met, ADRA2A C1291G, and DRD4-rs7403703 moderated the effect on ADHD symptoms.
Conclusions: Histamine may mediate the effects of food additives on ADHD symptoms, and variations in genes influencing the action of histamine may explain the inconsistency between previous studies. Genes influencing a range of neurotransmitter systems and their interplay with environmental factors, such as diet, need to be examined to understand genetic influences on ADHD symptoms.

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Child Adolesc Ment Health. 2010 Sep;15:130-33.
RECENT RESEARCH ON FOOD ADDITIVES: IMPLICATIONS FOR CAMH.
Stevenson J.
The question of the possible role of food additives, and specifically food colours, in elevating hyperactive behaviour in children has been long debated. There is now replicated evidence that the removal of food colours from the diet can make a small improvement in the behaviour of some children with ADHD. However, as yet the characteristics of those who benefit from this dietary change are unknown. Two studies from a research group at Southampton have extended this work to show that some children from the general population without ADHD show a similar benefit. The implications of these findings for those in CAMH services are discussed. They are considered alongside other forms of dietary treatment for ADHD such as the use of 'few foods'

diet and omega-3 fatty acids. Key Practitioner Message: 1. There is inconsistent evidence for the value of omega-3 supplementation in reducing hyperactivity levels 2. A 'few foods' diet can have substantial effects on symptoms in children with ADHD 3. The removal of food colours from the diet can have beneficial effects on behaviour in children with ADHD 4. Two recent studies have shown that food additives (colours and a preservative) can have an adverse effect on hyperactivity in children from the general population 5. Dietary manipulation should be considered as an approach to treatment in children where food diary data indicate a link between the intake of specific foods and drinks and behavior.

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Curr Pharm Des. 2010;16:2434-42.

WHAT CAN ACTIGRAPHY ADD TO THE CONCEPT OF LABSCHOOL DESIGN IN CLINICAL TRIALS?

Uebel H, Albrecht B, Kirov R, et al.

Pharmacological intervention with methylphenidate (MPH) is very common and helpful in the treatment of attentiondeficit/ hyperactivity disorder (ADHD). It ameliorates inattention, impulsivity and hyperactivity and improves psychosocial functioning. The core symptoms of ADHD are problematic mainly in demanding structured situations such as in the classroom. It was argued that MPH does not only lead to a decrease of hyperactivity in these situations but may also result in a general dampening of motor activity during non-structured leisure time. Unfortunately, only few clinical trials have investigated this practically important issue and thus it is still a matter of debate. It follows that many parents hesitate to accept psychotropic drugs for their children. To elucidate this problem in the current study, not only overall behavioral ratings (half-day blocks) but also day-long actigraphy was applied during an analogue classroom setting, where structured and non-structured situations alternated over time. Fourty-nine children with ADHD were assessed for treatment effects of once-daily extended-release and twice daily immediate-release methylphenidate (MPH) as well as placebo. Both MPH regimes yielded improved behavioral ratings during morning and afternoon, while actigraphy showed reduced motor activity in structured situations, but not during leisure time. Furthermore, the movement information obtained with actigraphy during structured situations could be differentiated from the one gained with overall behavioral ratings. Thus, while behavioral ratings provide a valid estimate of the overall symptomatology, additional information gathered with actigraphy may help to differentiate the impact of medication on hyperactive movement in different situations during the day. This may reflect a more valid picture of a child's real life and improve the quality of clinical trials. Thus, both methods may be regarded as complementary for the assessment of drug effects in children with ADHD and should be a standard of further laboratory school protocols in clinical trials.

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Epilepsy Behav. 2010;18:445-49.

ATTENTION-DEFICIT HYPERACTIVITY DISORDER AND NOCTURNAL EPILEPTIFORM ACTIVITY IN CHILDREN WITH EPILEPSY ADMITTED TO A NATIONAL EPILEPSY CENTER.

Wannag E, Eriksson AS, Larsson PG.

The aim of this study was to determine if there exists a relationship between attention-deficit hyperactivity disorder (ADHD) and the quantity of focal nocturnal epileptiform activity on the EEG (FNEA) measured as the percentage of epileptiform activity during non-REM sleep (spike index). This was accomplished with a prospective study of children aged 6-14 years consecutively admitted to our center. Of 362 patients, 44 (12.2%) had previously been diagnosed with ADHD. Twenty-four-hour ambulatory EEG recording and assessment of ADHD according to DSM-IV were performed in 46 children suspected of having ADHD. ADHD was diagnosed in 30. We could not find any correlation between the spike index in 8 children with FNEA and the severity of their ADHD symptoms. This study is underpowered and should be considered a pilot study. There is a

need for further investigation of a possible causal effect of FNEA on ADHD symptoms in larger cohorts of patients with FNEA.

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CNS Drugs. 2010;24:811-28.

SLEEP PROBLEMS IN THE CHILD WITH ATTENTION-DEFICIT HYPERACTIVITY DISORDER: DEFINING AETIOLOGY AND APPROPRIATE TREATMENTS.

Weiss MD, Salpekar J.

An estimated 2550 of children and adolescents with attention-deficit hyperactivity disorder (ADHD) experience problems with sleep. The most common sleep problems reported in children with ADHD include delayed sleep onset, sleep or bedtime resistance, prolonged tiredness upon waking and daytime sleepiness. Higher incidences of sleep disorders such as restless legs syndrome, periodic limb movement disorder and sleep-disordered breathing have been reported in paediatric ADHD populations compared with control populations. In some cases, medications for ADHD andor co-morbid disorders may also contribute to sleep disturbances. Assessment tools, such as parent-child questionnaires and sleep diaries, can help clinicians evaluate sleep disturbances. Sleep problems may potentially exacerbate ADHD symptoms, and interventions targeted at ensuring adequate sleep (including behavioural, dietary, specific pharmacological agents for treatment-induced insomnia, and melatonin) could in turn potentially attenuate symptoms associated with ADHD, such as irritability. Whether metabolic or neurological pathways common to both sleep and ADHD may be disrupted, and whether targeting treatments to these pathways may simultaneously improve both ADHD and sleep symptoms, needs further elucidation.

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Psychological Medicine: A Journal of Research in Psychiatry and the Allied Sciences. 2010 Jul;40:1079-88.

A CONTROLLED FAMILY STUDY OF CHILDREN WITH DSM-IV BIPOLAR-I DISORDER AND PSYCHIATRIC CO-MORBIDITY.

Wozniak J, Faraone SV, Mick E, et al.

Background: To estimate the spectrum of familial risk for psychopathology in first-degree relatives of children with unabridged DSM-IV bipolar-I disorder (BP-I).

Method: We conducted a blinded, controlled family study using structured diagnostic interviews of 157 children with BP-I probands (n=487 first-degree relatives), 162 attention deficit hyperactivity disorder (ADHD) (without BP-I) probands (n=511 first-degree relatives), and 136 healthy control (without ADHD or BP-I) probands (n=411 first-degree relatives).

Results: The morbid risk (MR) of BP-I disorder in relatives of BP-I probands (MR=0.18) was increased 4-fold [95% confidence interval (CI) 2.3–6.9, p<0.001] over the risk to relatives of control probands (MR=0.05) and 3.5-fold (95% CI 2.1–5.8, p<0.001) over the risk to relatives of ADHD probands (MR=0.06). In addition, relatives of children with BP-I disorder had high rates of psychosis, major depression, multiple anxiety disorders, substance use disorders, ADHD and antisocial disorders compared with relatives of control probands. Only the effect for antisocial disorders lost significance after accounted for by the corresponding diagnosis in the proband. Familial rates of ADHD did not differ between ADHD and BP-I probands.

Conclusions: Our results document an increased familial risk for BP-I disorder in relatives of pediatric probands with DSM-IV BP-I. Relatives of probands with BP-I were also at increased risk for other psychiatric disorders frequently associated with pediatric BP-I. These results support the

validity of the diagnosis of BP-I in children as defined by DSM-IV. More work is needed to better understand the nature of the association between these disorders in probands and relatives.

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Behav Brain Funct. 2010;6.

ASSOCIATION STUDY BETWEEN A POLYMORPHISM AT THE 3'-UNTRANSLATED REGION OF CLOCK GENE AND ATTENTION DEFICIT HYPERACTIVITY DISORDER.

Xu X, Breen G, Chen CK, et al.

Background: The circadian locomotor output cycles kaput (CLOCK) gene encodes protein regulation circadian rhythm and also plays some roles in neural transmitter systems including the dopamine system. Several lines of evidence implicate a relationship between attention-deficit hyperactivity disorder (ADHD), circadian rythmicity and sleeping disturbances. A recent study has reported that a polymorphism (rs1801260) at the 3'-untranslated region of the CLOCK gene is associated with adult ADHD.
Methods: To investigate the association between the polymorphism (rs1801260) in ADHD, two samples of ADHD probands from the United Kingdom (n = 180) and Taiwan (n = 212) were genotyped and analysed using within-family transmission disequilibrium test (TDT). Bonferroni correction procedures were used to just for multiple comparisons.
Results: We found evidence of increased transmission of the T allele of the rs1801260 polymorphism in Taiwanese samples (P = 0.010). There was also evidence of preferential transmission of the T allele of the rs1801260 polymorphism in combined samples from the Taiwan and UK (P = 0.008).
Conclusion: This study provides evidence for the possible involvement of CLOCK in susceptibility to ADHD.

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Int J Psychophysiol. 2010;77:247.

CHANGES OF ERP AMPLITUDE IN CHILDREN WITH ATTENTION-DEFICIT HYPERACTIVITY DISORDER IN TEST GO/NOGO.

Yakovenko EA, Nikishena IS, Chutko LS, et al.

The worldwide increase in information load and cases of ADD in children make the research of possible corrections of these conditions almost urgent. During the last few years, the RAS team of researchers has made several attempts to use event-related potentials of the brain as objective criteria of impairment of attention in humans. The well-known symptoms of the attention-deficit hyperactivity disorder (ADHD) are inattention, hyperactivity, and impulsiveness. At the same time, there are inconsistent data about the change of amplitudes of the P3 component for children with this condition. The purpose of the present research was to study the dependence of the P300 component amplitude on the action connected with the suppression, and also the evaluation of the quality of the test performance with the GO/NOGO paradigm of children with ADHD. One hundred forty children with ADHD, age 10-15 years, participated in the study. The GO/NOGO task consisted of 480 stimulus pairs-low-low tone (GO) and low-high tone (NOGO). Foreach subject, the quantity of misses of significant stimulus pairs (an error of carelessness) and the quantity of false pressing of the button at presentation of insignificant pairs (the errors connected with impulsiveness) were quantified. The number of errors in the GO/NOGO task in the group of children with ADHD was greater than those of the group of healthy children. Significant decrease in the P3 component amplitude of GO and NOGO in the group of children with ADHD, in comparison with healthy children, was detected. The design of the task and the number of children with ADHD studied have allowed for revealing correlations between amplitude of a component involving an action and amount of misses of significant stimulus pairs, and also correlations between amplitudes of a component of suppression of action and the amount of false

pressing insignificant stimulus pairs. It is necessary to note that parameters of the amount of misses and false presses are significantly correlated among themselves

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Arq Neuro-Psiquiatr. 2010 Aug;68:545-49.

EXECUTIVE DYSFUNCTION SCREENING AND INTELLECTUAL COEFFICIENT MEASUREMENT IN CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER.

Zambrano-Sánchez E, Martinez-Cortés JA, del Rió-Carlos Y, et al.

Objective: To perform a complete Intelligence quotient (IQ) measurement (verbal, performance, and total) and subsequently, t o compare executive function (EF) measurements in subgroups of children with attention deficit-hyperactivity disorder (ADHD) with a control group.

Method: We studied a group of children from 7-12 years of age from public elementary schools. Children were selected by means of Diagnostic and Statistical Manual of Mental Disorders-IV-Revised (DSM-IV-R) parent and teacher questionnaires for ADHD. EFs were screened by Weschler Intelligence Scale for Children (WISC-R) performance intelligence quotient (IQ) determination of the following sub-tests: picture completion; block designs, and object assembly tests. Simultaneously, total (T-), performance (P-), and verbal (V-) IQs were measured for each patient.

Results: We studied 26 control subjects, and 35 children with ADHD. Numbers of children in each ADHD subtype group were as follows: 15 in the combined group (-C), 13 in the inattentive group (-I), and 7 in hyperactivity group (-H). We found significant lower EF scores in picture arrangement ($F = 3.76$, df 3,57, $p = 0.01$), block design ($F = 4.55$, df 3,57, $p < 0.01$), and object assembly ($F = 4.52$, df 3,57, $p < 0.01$). Post-hoc analysis showed that differences were located among ADHD-C, ADHD-I, and ADHD-H groups when compared with controls. We found significantly lower cognitive scores in the ADHD-I group as follows: P-IQ ($F = 3.57$, df 3,57, $p = 0.02$), and T-IQ ($F = 2.90$, df 3,57, $p = 0.04$).

Conclusion: Our results showed that screening of EF alteration in children with ADHD is easy and rapid by means of certain P-IQ determination sub-scales of the WISC test; moreover, complementary IQ determination can be measured simultaneously. Overall, children with ADHD exhibited an EF alteration. ADHD-I children demonstrated lower P-IQ, and T-IQ scores than control children.

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Int J Neuropsychopharmacol. 2010 Aug;13:933-41.

SEROTONERGIC NEUROTRANSMISSION AND LAPSES OF ATTENTION IN CHILDREN AND ADOLESCENTS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER: AVAILABILITY OF TRYPTOPHAN INFLUENCES ATTENTIONAL PERFORMANCE.

Zepf FD, Gaber TJ, Baurmann D, et al.

Deficiencies in serotonergic (5-HT) neurotransmission have frequently been linked to altered attention and memory processes. With attention deficit hyperactivity disorder (ADHD) being associated with impaired attention and working memory, this study investigated the effects of a diminished 5-HT turnover achieved by rapid tryptophan depletion (RTD) on attentional performance in children and adolescents with ADHD. Twenty-two male patients with ADHD (aged 9–15 yr) received the RTD procedure Moja-De and a tryptophan (Trp)-balanced placebo (Pla) in a randomized, double-blind, within-subject crossover design on two separate study days. Lapses of attention (LA) and phasic alertness (PA) were assessed within the test battery for attentional performance under depleted and sham-depleted conditions 120 (T1), 220 (T2) and 300 (T3) min after intake of RTD/Pla. At T1 there was a significant main effect for RTD, indicating more LA under intake of a Trp-balanced Pla compared to diminished 5-HT neurotransmission. For T2/T3 there were no such effects. PA was not affected by the factors RTD/Pla and time. Interactions of

5-HT with other neurotransmitters as possible underlying neurochemical processes could be subject to further investigations involving healthy controls as regards altered attentional performance in children and adolescents.

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Neuropediatrics. 2010;41:55-59.

IMPACT OF LONG-TERM TREATMENT OF METHYLPHENIDATE ON HEIGHT AND WEIGHT OF SCHOOL AGE CHILDREN WITH ADHD.

Zhang H, Du M, Zhuang S.

Stimulant-associated growth deficits in children with attention deficit hyperactivity disorder (ADHD) have long been a concern. We chose 146 school age children diagnosed with ADHD being treated with methylphenidate (MPH) and 29 drug-free ADHD children, and followed them up for 24 years. We recorded the changes in height and weight after long-term methylphenidate treatment and analyzed the influence of confounding factors to growth in height, weight, and height velocity. The change of the gap between patients height and mean height in the methylphenidate group was 1.86(plus or minus)0.82cm (P<0.001); in controls it was 0.26(plus or minus)0.51cm (P<0.05). The changes of height standard deviation score (SDS) in the methylphenidate group and controls were 0.14(plus or minus)0.23 SD (P<0.001) and +0.05(plus or minus)0.10 SD (P<0.05), respectively. The differences between the 2 groups were significant (P<0.001). Both correlation and regression analyses indicated that the duration of treatment contributed significantly to the variance in change of height (P<0.001). The height velocity was significantly attenuated in the first year. The change of the gap between the patients weight and weight for height after methylphenidate was 0.14(plus or minus)1.25kg (P>0.05). From this study, a small but significant deceleration of height velocity has been identified as a long-term side effect of methylphenidate, the magnitude of the height deficit is related to the duration of treatment. Methylphenidate had no significant influence on weight and BMI values.

ATTUALITÀ DEFICIT D' ATTENZIONE NELLA SETTIMANA EUROPEA DELL' ADHD UNO STUDIO RIACCENDE LE POLEMICHE SUI RISCHI DI VALUTAZIONI FRETTOLOSE

Iperattivi o vivaci? Il modo giusto per capirlo

Italia all' avanguardia nelle misure per evitare l' eccessivo ricorso ai farmaci

Entrate in una classe dell' ultimo anno di scuola materna: ci sarà chi ha più di sei anni e chi invece ne ha compiuti cinque solo da qualche mese. Le iscrizioni al primo anno di "scuola dell' infanzia", infatti, possono essere anticipate, in molti Paesi, Italia compresa, a due anni e mezzo rispetto agli abituali tre. Ebbene, tra tutti questi bambini, almeno in America, i più "giovani" hanno il 60% in più di probabilità di ricevere una diagnosi di ADHD, la sindrome da deficit di attenzione e iperattività. Lo ha dimostrato una ricerca, pubblicata sul Journal of Health Economic, su 12mila bimbi americani, che ha riacceso la discussione su una malattia di cui si parlerà in particolare nei prossimi giorni, in occasione della Settimana europea dell' ADHD, da oggi al 26. «Un bimbo più piccolo spesso riceve una diagnosi di ADHD solo perché è messo a confronto con compagni più avanti nello sviluppo» commenta l' autore, Todd Elder dell' Università del Michigan, ipotizzando che negli Usa ben il 20% dei 5 milioni di bimbi diagnosticati come iperattivi non lo sia affatto. Un dato su cui riflettere anche in Italia, perché almeno il sospetto di ADHD può effettivamente essere indotto da un paragone scorretto. Bisogna, però, tener presente che, mentre negli Usa la diagnosi di ADHD viene fatta a 8 bambini e adolescenti su 100, in Italia si reputa che soffra di ADHD l' 1% dei minori (secondo altre stime, il 3%). Per di più negli Usa il ricorso a sostanze psicoattive, simili alle anfetamine, è molto più frequente. Il dibattito comunque ferve anche nel nostro Paese, che però nel 2007 ha istituito un "Registro" dei bambini in cura per l' ADHD con i due farmaci in commercio da noi, metilfenidato o atomoxetina. I medicinali possono essere prescritti solo dai Centri iscritti al Registro, che devono operare secondo criteri per il percorso diagnostico e terapeutico prestabiliti. «Vogliamo evitare eccessi di diagnosi e di prescrizione - spiega Pietro Panei, responsabile del Registro presso l' Istituto Superiore di Sanità -. Un bimbo con sospetto ADHD, segnalato dal pediatra, è valutato nei centri di neuropsichiatria infantile del territorio, dove, in caso di diagnosi accertata, inizia la psicoterapia. Se i problemi non si risolvono, arriva a uno dei Centri di riferimento e ripete i test; in caso di conferma di ADHD, si decide la strada terapeutica dando la precedenza al trattamento senza farmaci». E, infatti, un terzo dei 120 Centri, pur avendo fatto diagnosi di ADHD, non ha mai inserito un paziente nel Registro per la cura con i farmaci. Farmaci non privi di effetti collaterali: con il metilfenidato, ad esempio, si rischiano danni cardiovascolari; l' atomoxetina aumenta il pericolo di suicidio. E di fatto si sa ancora poco sulle conseguenze di un uso a lungo termine, iniziato da piccoli. Per capire meglio gli effetti sulla crescita è in corso uno studio europeo cui partecipa anche il Registro italiano. «Sono farmaci da usare solo quando servono davvero - interviene Maurizio Bonati, responsabile del Laboratorio per la Salute Materno Infantile del Mario Negri di Milano -. Ma in Italia siamo lontani dagli eccessi dell' America dove c' è una forte medicalizzazione indotta anche dalla spinta a risparmiare: le pillole costano molto meno di una psicoterapia che si affronta dopo un iter che richiede più di uno specialista e 12 ore di test e valutazioni cliniche». La diagnosi è peraltro il nodo critico di tutta la faccenda. Chi mette in discussione l' esistenza dell' ADHD in quanto malattia, sottolinea l' inadeguatezza dei test, ai quali risulterebbe "positivo" qualunque bambino un pò vivace. Nel questionario, che può essere usato anche da genitori e insegnanti per indirizzare i primi sospetti ci sono nove situazioni da valutare, tra cui, ad esempio, la riluttanza nel fare i compiti, la tendenza a non ascoltare, ma i comportamenti, per essere significativi devono, per esempio, persistere da almeno sei mesi, creare disagio in più contesti. «Le valutazioni di genitori e insegnanti sono importanti - sottolinea Giuseppe Chiarenza, vicepresidente della Società italiana di neuropsichiatria dell' infanzia e dell' adolescenza -. Durante una visita, più difficilmente si manifestano problemi di distrazione e iperattività: è in gruppo che essere attenti richiede più fatica». Resta un fatto: come per molte patologie neuropsichiatriche la diagnosi è clinica. Una freccia nell' arco di chi nega l' esistenza dell' ADHD, ma qualcosa sta forse cambiando. «Esistono prove che l' elettroencefalogramma dei bimbi con ADHD è diverso dalla norma - dice Chiarenza -. E la valutazione dell' attività elettrica del cervello può anche indicare chi sta rispondendo ai farmaci, mentre i test approfonditi sull' attenzione individuano chi può trarre più beneficio dalle medicine. Una diagnosi accurata è fondamentale per impostare il trattamento, tenendo presente che spesso basta insegnare ai genitori un nuovo modello di comportamento col figlio, che lo gratifichi e lo incoraggi anziché farlo sentire "difficile"». Elena Meli RIPRODUZIONE RISERVATA

Meli Elena

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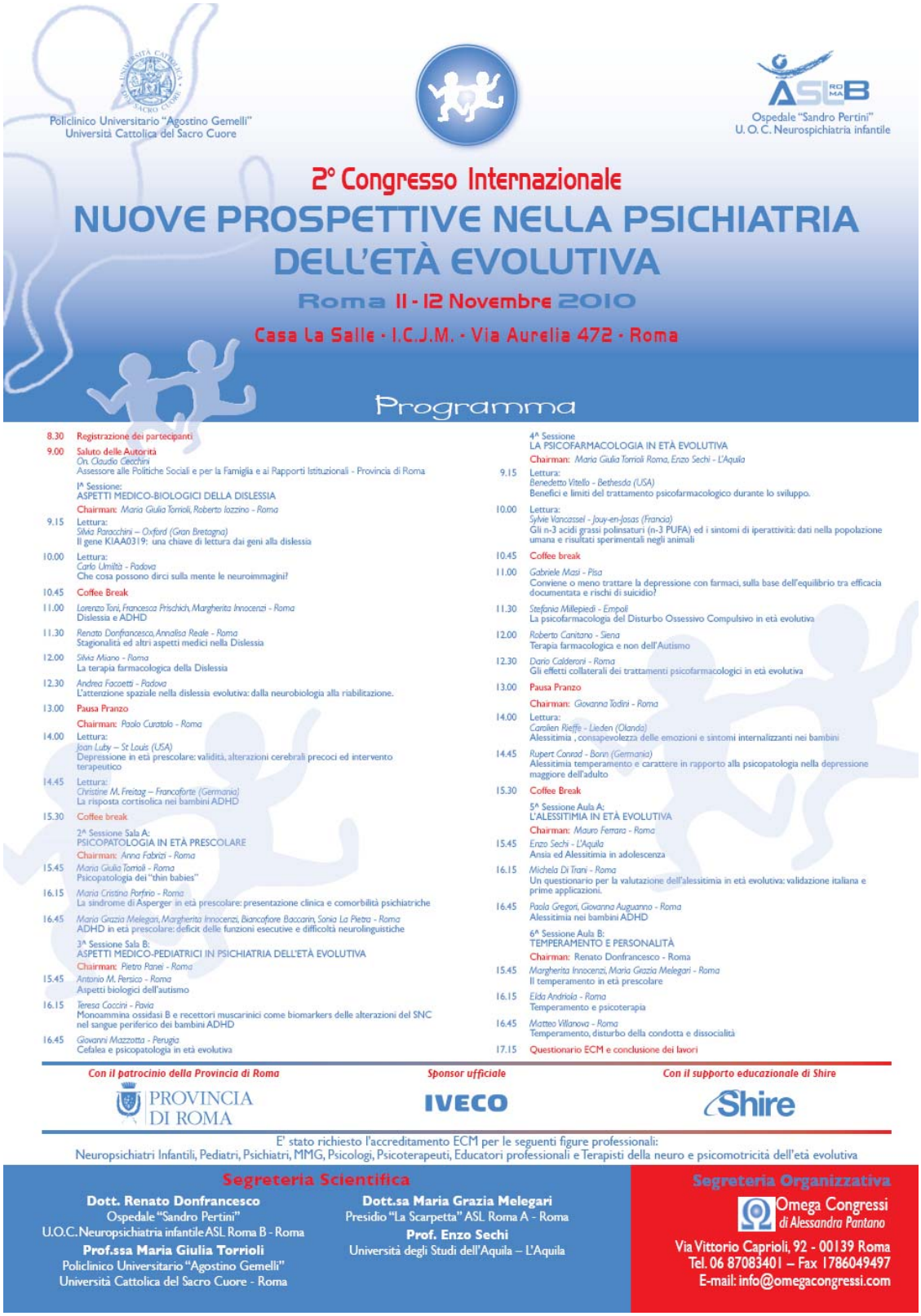
(19 settembre 2010) - Corriere della Sera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U. O. C. Neurospichiatria infantile
2° Congresso Internazionale
NUOVE PROSPETTIVE NELLA PSICHIATRIA DELL'ETÀ EVOLUTIVA
Roma 11 - 12 Novembre 2010
Casa La Salle - I.C.J.M. - Via Aurelia 472 - Roma
Programma
8.30 Registrazione dei partecipanti
9.00 Saluto delle Autorità
On. Claudio Cecchini
Assessore alle Politiche Sociali e per la Famiglia e ai Rapporti Istituzionali - Provincia di Roma
I^A Sessione:
ASPETTI MEDICO-BIOLOGICI DELLA DISLESSIA
Chairman: Maria Giulia Torrioli, Roberto Iozzino - Roma
9.15 Lettura:
Silvia Paracchini – Oxford (Gran Bretagna)
Il gene KIAA0319: una chiave di lettura dai geni alla dislessia
10.00 Lettura:
Carlo Umiltà - Padova
Che cosa possono dirci sulla mente le neuroimmagini?
10.45 Coffee Break
11.00 Lorenzo Toni, Francesca Prischich, Margherita Innocenzi - Roma
Dislessia e ADHD
11.30 Renato Donfrancesco, Annalisa Reale - Roma
Stagionalità ed altri aspetti medici nella Dislessia
12.00 Silvia Miano - Roma
La terapia farmacologica della Dislessia
12.30 Andrea Facoetti - Padova
L'attenzione spaziale nella dislessia evolutiva: dalla neurobiologia alla riabilitazione.
13.00 Pausa Pranzo
Chairman: Paolo Curatolo - Roma
14.00 Lettura:
Joan Luby – St Louis (USA)
Depressione in età prescolare: validità, alterazioni cerebrali precoci ed intervento terapeutico
14.45 Lettura:
Christine M. Freitag – Francoforte (Germania)
La risposta cortisolica nei bambini ADHD
15.30 Coffee break
2^A Sessione Sala A:
PSICOPATOLOGIA IN ETÀ PRESCOLARE
Chairman: Anna Fabrizi - Roma
15.45 Maria Giulia Torrioli - Roma
Psicopatologia dei "thin babies"
16.15 Maria Cristina Porfirio - Roma
La sindrome di Asperger in età prescolare: presentazione clinica e comorbilità psichiatriche
16.45 Maria Grazia Melegari, Margherita Innocenzi, Biancofiore Baccarin, Sonia La Pietra - Roma
ADHD in età prescolare: deficit delle funzioni esecutive e difficoltà neurolinguistiche
3^A Sessione Sala B:
ASPETTI MEDICO-PEDIATRICI IN PSICHIATRIA DELL'ETÀ EVOLUTIVA
Chairman: Pietro Panei - Roma
15.45 Antonio M. Persico - Roma
Aspetti biologici dell'autismo
16.15 Teresa Coccini - Pavia
Monoammina ossidasi B e recettori muscarinici come biomarkers delle alterazioni del SNC nel sangue periferico dei bambini ADHD
16.45 Giovanni Mazzotta - Perugia
Cefalea e psicopatologia in età evolutiva
4^A Sessione
LA PSICOFARMACOLOGIA IN ETÀ EVOLUTIVA
Chairman: Maria Giulia Torrioli Roma, Enzo Sechi - L'Aquila
9.15 Lettura:
Benedetta Vitello - Bethesda (USA)
Benefici e limiti del trattamento psicofarmacologico durante lo sviluppo.
10.00 Lettura:
Sylvie Vancassel - Jouy-en-Josas (Francia)
Gli n-3 acidi grassi polinsaturi (n-3 PUFA) ed i sintomi di iperattività: dati nella popolazione umana e risultati sperimentali negli animali
10.45 Coffee break
11.00 Gabriele Masi - Pisa
Conviene o meno trattare la depressione con farmaci, sulla base dell'equilibrio tra efficacia documentata e rischi di suicidio?
11.30 Stefania Millepiedi - Empoli
La psicofarmacologia del Disturbo Ossessivo Compulsivo in età evolutiva
12.00 Roberto Canitano - Siena
Terapia farmacologica e non dell'Autismo
12.30 Dario Calderoni - Roma
Gli effetti collaterali dei trattamenti psicofarmacologici in età evolutiva
13.00 Pausa Pranzo
Chairman: Giovanna Todini - Roma
14.00 Lettura:
Carolien Rieffe - Lieden (Olanda)
Alessitimia , consapevolezza delle emozioni e sintomi internalizzanti nei bambini
14.45 Rupert Conrad - Bonn (Germania)
Alessitimia temperamento e carattere in rapporto alla psicopatologia nella depressione maggiore dell'adulto
15.30 Coffee Break
5^A Sessione Aula A:
L'ALESSITIMIA IN ETÀ EVOLUTIVA
Chairman: Mauro Ferrara - Roma
15.45 Enzo Sechi - L'Aquila
Ansia ed Alessitimia in adolescenza
16.15 Michela Di Trani - Roma
Un questionario per la valutazione dell'alessitimia in età evolutiva: validazione italiana e prime applicazioni.
16.45 Paola Gregori, Giovanna Auguanno - Roma
Alessitimia nei bambini ADHD
6^A Sessione Aula B:
TEMPERAMENTO E PERSONALITÀ
Chairman: Renato Donfrancesco - Roma
15.45 Margherita Innocenzi, Maria Grazia Melegari - Roma
Il temperamento in età prescolare
16.15 Elda Andriola - Roma
Temperamento e psicoterapia
16.45 Matteo Villanova - Roma
Temperamento, disturbo della condotta e dissocialità
17.15 Questionario ECM e conclusione dei lavori
Con il patrocinio della Provincia di Roma
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U.O.C. Neuropsichiatria infantile ASL Roma B - Roma
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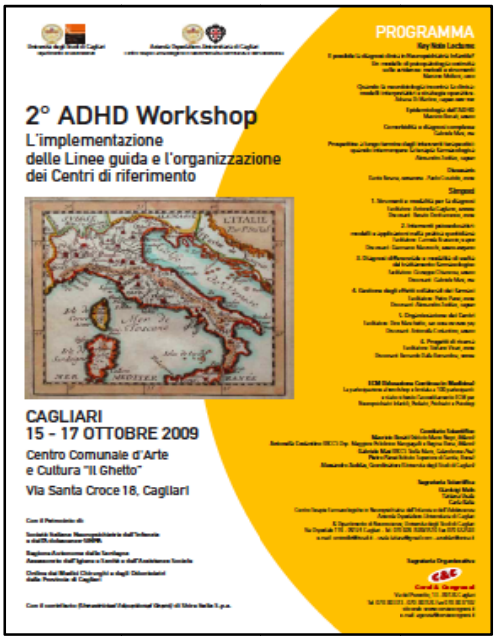

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Il Progetto è realizzato con il contributo, parziale, della Regione Lombardia
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ISTITUTO DI RICERCHE FARMACOLOGICHE MARIO NEGRI
DIPARTIMENTO DI SALUTE PUBBLICA
Laboratorio per la Salute Materno Infantile
Via Giuseppe La Masa, 19 - 20156 Milano MI - Italia - www.marionegri.it
tel +39 02 39014.511 - fax +39 02 3550924 - mother_child@marionegri.it