

ATTENTION DEFICIT DISORDERS

BRAIN MRI CHANGES AND MEASURES OF ATTENTION IN ADHD

The relation between measures of inhibition and sustained attention and MRI structural changes in the caudate and frontal lobe was evaluated in 10 boys with ADHD (aged 8-17) and 11 male controls, examined at the Massachusetts General Hospital, and McLean Hospital, Boston, MA. Children with ADHD had reversed asymmetry of the head of the caudate nucleus, smaller volume of the caudate head, and smaller volume of the white matter of the right frontal lobe. They scored more poorly on measures of inhibition and sustained attention but not on IQ, achievement, or motor speed. Those with reversed caudate asymmetry had lower scores on inhibition tests and more externalizing behavior disorder. Attention deficits were related to smaller volume of right hemisphere white matter. (Semrud-Clikeman M, Steingard RJ, Filipek P, Biederman J, Bekken K, Renshaw PF. Using MRI to examine brain-behavior relationships in males with attention deficit disorder with hyperactivity. *J Am Acad Child Adolesc Psychiatry* April 2000;39:477-484). (Reprints: Dr Semrud-Clikeman, SZB 504, University of Texas at Austin, Austin, TX 78712).

COMMENT. The symptom of disinhibition in children with ADHD is correlated with reversed caudate asymmetry whereas deficits in attention are related to right hemisphere structural changes. Both disorders need to be addressed in treatment that should include additional time for processing information and untimed tests.

PHONOLOGICAL PROCESSING AND INHIBITION IN ADHD AND RD

The cognitive profile of 4 groups of children (2 of ADHD v No ADHD; and 2 of reading disability (RD) v no RD), aged 7 to 11 years, was examined using two measures of inhibitory control and 3 phonological processing measures, in a study at the Hospital for Sick Children, Toronto, Canada. All phonological measures were impaired in both RD groups relative to the non-RD groups, and measures of inhibition were impaired in the ADHD groups relative to non-ADHD groups. An RD effect on inhibitory control was present in one inhibition measure. The group with co-morbid ADHD and RD showed additive deficits of both single groups. (Purvis KL, Tannock R. Phonological processing, not inhibitory control, differentiates ADHD and reading disability. *J Am Acad Child Adolesc Psychiatry* April 2000;39:485-494). (Reprints: Dr Tannock, Department of Psychiatry Research, Hospital for Sick Children, 555 University Ave, Toronto, Ontario, Canada M5G 1X8).

COMMENT. Measures of phonological processing may differentiate children with and without reading disability, whereas impairment of inhibitory control may not distinguish between ADHD and RD.

MENTAL RETARDATION SYNDROMES

ATRX GENE MUTATION, MENTAL RETARDATION AND EPILEPSY

A pedigree including 4 mentally retarded family members with a nonsense mutation in the ATRX gene is reported from the John Radcliffe Hospital, University of Oxford, UK. Two patients had the typical features of ATR-X syndrome, with facial dysmorphism, genital abnormalities and thalassemia, and 3 had seizures. (Guerrini R, Shanahan JL, Carrozzo R, Bonanni P, Higgs DR, Gibbons RJ.