

ADHD patients showed comparable abnormalities in regional brain volumes, and the changes correlated significantly with parent- and physician-rated severity of ADHD. It is concluded that brain volumetric and development changes related to genetic and/or early environmental factors in children with ADHD are fixed and nonprogressive through adolescence, and are unrelated to stimulant medication. (Castellanos FX, Lee PP, Sharp W, et al. Developmental trajectories of brain volume abnormalities in children and adolescents with attention-deficit/hyperactivity disorder. *JAMA* October 9 2002;288:1740-1748). (Reprints: F Xavier Castellanos MD, New York University Child Study Center, 577 First Ave, New York, NY 10016).

COMMENT. It should be emphasized to parents that these quantitative MRI studies are only appropriate in research and not applicable to the diagnostic assessment and management of ADHD. The decreases in brain total and regional volumes in ADHD patients appear to reflect neurobiological insults or genetic factors that have influenced brain development early. The 3% disparity in brain volume stays constant through adolescence. In later childhood and adolescence, for the most part these decreases in brain volumes remain static and nonprogressive and are not influenced by medications or behavioral interventions. The previously emphasized frontal-striatal brain abnormality in ADHD is not confirmed in this study. Never medicated ADHD children have smaller white-matter volumes than those with ADHD who receive stimulants and compared to normal controls. These findings appear to further support arguments in favor of using medications for ADHD.

AUTISTIC SPECTRUM DISORDERS

EVALUATION OF MMR VACCINATION AND AUTISM LINK

A retrospective cohort study of autism in all children born in Denmark from January 1991 through December 1998 and those receiving measles, mumps, and rubella (MMR) vaccination is reported from the Danish Epidemiology Science Center, Aarhus, Denmark. Of 537,303 children in the cohort, 440,655 (82%) had received the MMR vaccine, 316 children were identified with a diagnosis of autistic disorder, and 422 with other autistic-spectrum disorders. The relative risk of autistic and other autistic-spectrum disorders in vaccinated compared to unvaccinated children was 0.92 and 0.83, respectively. No association was detected between age at time of vaccination, time since vaccination, and date of vaccination and development of autistic disorder. It is concluded that the evidence is against the hypothesis that MMR vaccination causes autism. (Madsen KM, Hviid A, Vestergaard M et al. A population-based study of measles, mumps, and rubella vaccination and autism. *N Engl J Med* November 7, 2002;347:1477-1482). (Reprints: Dr Madsen, Danish Epidemiology Science Center, Department of Epidemiology and Social Medicine, Vennelyst Blvd 6, DK-8000, Aarhus C, Denmark).

COMMENT. It has been suggested that a reported increase in the incidence of autism in California may be linked to the widespread use of MMR vaccine. Symptoms of developmental regression and gastrointestinal disorders have coincided with MMR vaccination, and measles virus has been detected in the terminal ileum of these patients. Although these proposed associations may be suggestive of a causative role of MMR in autism, this retrospective cohort study fails to confirm the hypothesis and shows no temporal or other association between MMR and the onset of autism. The prevalence rates in 8-year-old children born between 1991 and 1998 in the Danish cohort were 7.7 per 10,000 for autistic disorder and 22.2 per 10,000 for other autistic-spectrum disorders. These

rates are similar to those reported among French and US children. Recent observed increases in prevalence of autism in California and Denmark have occurred well after the introduction of the MMR vaccine and may possibly be related to heightened awareness of the diagnosis among physicians. The role of vaccines in certain neuropsychiatric illness is often controversial, but a link between MMR and autism appears to be unlikely.

ABNORMAL FRONTAL AND TEMPORAL LOBE ASYMMETRIES IN AUTISM

Regional cortical volume asymmetry patterns, particularly those associated with language function, in 16 boys with autism (aged 7-11 years) were compared with measures in 15 normal, age- and handedness-matched controls, in an MRI study at the Massachusetts General Hospital, Boston, and other centers. Boys with autism had significant asymmetry reversal in frontal language-related cortex: 27% larger on the right in autism and 17% larger on the left in normal controls. In addition, the posterior temporal fusiform gyrus was more left-sided in autism, whereas adjacent fusiform gyrus and temporooccipital inferior temporal gyrus were more right-sided in autism. Inferior temporal regions are involved in visual social/face processing. Abnormal structural asymmetries in language and face processing cerebral regions may relate to language and social disturbances common in autism. (Herbert MR, Harris GJ, Adrien KT, et al. Abnormal asymmetry in language association cortex in autism. *Ann Neurol* November 2002;52:588-596). (Respond: Dr Herbert, Center for Morphometric Analysis, Massachusetts General Hospital, CNY-149, Room 6012, Boston, MA 02114).

COMMENT. Both frontal (Broca) and temporal (Wernicke) language-related association cortex regions show a reversal of asymmetry in boys with autism compared to controls, but the frontal abnormality is significantly greater. Previous SPECT and PET regional cerebral blood flow studies also show similar asymmetry reversals. MRI studies in normal adults show that the left hemisphere cortical regions are larger in right-handed, left-hemisphere language dominant subjects. In children with specific language impairment (SLI), MRI studies have shown abnormal asymmetries in language cortical measures, similar to those observed in autistic children. Language abnormalities in autism share many features of those in SLI, and these studies support a link between the two disorders.

SEIZURE DISORDERS

EXERCISE-INDUCED TEMPORAL LOBE EPILEPSY

Two patients, ages 16 and 28, with left temporal lobe seizures induced by exercise are reported from Austin and Repatriation Medical Centre, Victoria, Australia. Patient 1 had seizures precipitated by physical activity from age 12 years. An aura was followed by blank stare, orobuccal automatisms, and postictal confusion. The seizures occurred within 5 to 20 minutes of commencing running and playing soccer or tennis. Other family members had seizures but none was exercise induced. Interictal EEG showed left temporal slowing, and during video EEG monitoring, two complex partial seizures were induced by stair stepping for 5 minutes. MRIs were normal, but interictal PET scan showed left temporal hypometabolism. Reduced exercise and topiramate were followed by seizure control for 7 months. Patient 2 had seizures from age 21. They began with *deja vu* and decreased awareness, followed by staring, and oral and bimanual automatisms.