COMMENT. Proton MR spectroscopic imaging (MRSI) will detect neuronal metabolic dysfunction in areas of focal cortical dysplasia defined by MRI and may also demonstrate involvement of surrounding tissue. Different types of cortical developmental malformation, resulting from insults at various stages of cell differentiation and migration, show different degrees of metabolic dysfunction. Imaging techniques that define the structure and metabolism (PET, MRSI) or function (fMRI, EEG) of cortical lesions are important in future investigation of epileptic foci and in studies of the neuroanatomical basis of learning disabilities (See PPN III, 1997;pp 212, 269-276).

Role of transcription factors in the development of the cerebral cortex is reviewed from the Child Study Center, Yale University School of Medicine, New Haven, CT (Leckman JF, Lombroso PJ. J Am Acad Child Adolesc Psychiatry April 1998;37:451-452). Regulatory proteins that recognize and bind with DNA stretches within a promoter region are called transcription factors. These factors are themselves regulated by neurotransmitter signals, initiating the transcription of specific target genes. Mutations within these regulatory proteins can affect a number of organ systems, leading to multiple developmental abnormalities.

MRI ANALYSIS OF NEUROFIBROMATOSIS TYPE 1

Serial MRI scans of 30 patients (mean age, 12 years) with neurofibromatosis Type 1 (NF-1) showed the evolution of high-signal brain lesions in a prospective study at the University of Connecticut Health Center, Farmington, and Children's Medical Center, Hartford, CT. At initial examination, 19 patients had brain lesions identified by MRI, located in the hemisperes in 19, the brainstem in 10, and cerebellum in 10. Over a mean follow-up interval of 2 to 3 years, a decrease in total number and size of lesions in the hemispheres and cerebellum was noted, whereas brainstem lesions increased in number and size. Mass effect was associated with lesions in the brainstem, thalamus and cerebellar peduncles. Surgery or radiotherapy was required for mass lesions in 3 patients. (DiMario FJ Jr, Ramsby G. Magnetic resonance imaging lesion analysis in neurofibromatosis type 1. Arch Neurol April 1998;55:500-505). (Respond: Francis J DiMario Jr, MD, Department of Pediatrics, Division of Neurology, Connecticut Children's Medical Center, 282 Washington St, Hartford, CT 06106).

COMMENT. High-signal MRI lesions in NF-1 evolve over time. They either increase or decrease in size or number, dependent on the location. Brainstem lesions are likely to increase whereas hemisphere and cerebellar lesions may regress. Correlations between T2-weighted hyperintensities (UBOs) and lower IQs in children with NF-1 have been reported by Denckla MB and others. (See PPN III, 1997;pp 291-294).

ATTENTION DEFICIT AND LEARNING DISORDERS

LONG-TERM OUTCOME OF ADHD

The adult outcome of hyperactive boys with attention deficit hyperactivity disorder was evaluated by prospective follow-up and direct psychiatric interviews of 85 probands and 73 comparison subjects at the Child and Adolescent Behavior Center, Long Island Jewish Medical Center, New Hyde Park, NY. The patients had been referred at an average age of 7 years, and they were interviewed at a mean age of 24 years. ADHD had resolved, occurring in only 4% of probands and none of