adjacent to an epileptogenic lesion. Unlike EEG, MEG is restricted to interictal recordings, but the procedure is noninvasive. This study demonstrates that the accuracy of MEG localization of epileptogenic foci is equal to that of the invasive ictal EEG recordings.

LANGUAGE RECOVERY AFTER LEFT HEMISPHERECTOMY

The language proficiency of 6 right-handed children (ages 7-14 years) with Rasmussen's syndrome, who underwent left hemidecorticectomy after 5 or more years of normal language development before seizures, were investigated at the Johns Hopkins Hospital, Baltimore, MD. The ability to discriminate consonants and vowels was improved within 4 to 16 days after surgery, when compared to that before surgery, whereas other language functions remained severely impaired until 6 months. Word repetition and phrasal comprehension recovered fully within 1 year, while expressive functions and naming were delayed, and spontaneous speech was telegraphic and restricted to single words. All patients could walk unaided, but had little use of the right arm or hand. Seizures were controlled and antiepileptic drugs were withdrawn in 3.

Rapid recovery of receptive language after surgery suggests that the intact right hemisphere has an innate ability to analyse phonemes and discriminate consonants and vowels. Delayed and partial recovery of expressive language functions may be attributed to plasticity of the right hemisphere, persisting after 5 years of age, the proposed critical age for completion of language acquisition and lateralization. (Boatman D, Freeman J, Vining E et al. Language recovery after left hemispherectomy in children with late-onset seizures. Ann Neurol Oct 1999;46:579-586). (Respond: Dr Boatman, Department of Neurology, Johns Hopkins Hospital, 600 North Wolfe Street, Meyer 222, Baltimore, MD 21287).

COMMENT. Explanations offered for the immediate improvement in phoneme discrimination after left hemispherectomy in these patients included: 1) the innate receptive language capability of the right hemisphere; and 2) a bilateral representation of phoneme processing, at least until adolescence. The right hemisphere is capable of functioning when receptive, and to some extent expressive, language abilities have been undermined by seizures and damage to the left hemisphere in young children.

EARLY ONSET SEIZURES BEGET SEIZURES

The long-term effect of early-life seizures on later seizure-induced neuronal damage and behavior was investigated in the laboratory using systemic kainate to induce seizures in rats at the Massachusetts General Hospital, Boston, MA. Memory was tested using a Morris water maze, and brains were examined histologically for evidence of injury. Seizures induced during the second week of life (15 days) were not associated with brain injury or cell death, but they predisposed animals to extensive neuronal injury and impairment of learning when seizures were again induced in adulthood (45 days). (Koh S, Storey TW, Santos TC, Mian AY, Cole AJ. Early-life seizures in rats increase susceptibility to seizure-induced brain injury in adulthood. Neurology September 1999;53:915-921). (Reprints: Dr Andrew J Cole, Epilepsy Service, Massachusetts General Hospital, VBK 830, 55 Fruit Street, Boston, MA 02114).

COMMENT. These laboratory studies confirm previously reported evidence that seizures in young experimental animals can be followed by delayed brain growth, and lowered seizure thresholds. (Theodore W, Wasterlain CG. Do early seizures beget epilepsy? Editorial. Neurology Sept 1999;53:898-899). The studies

argue in favor of aggressive treatment of uncontrolled recurrent seizures, but the use of antiepileptic drugs to prevent epilepsy in children having single or infrequent febrile or afebrile seizures remains controversial. Most authorities do not recommend long-term continuous AEDs for prevention of febrile seizures. Each child is an individual, the decision to start AEDs depending on the cause, severity, associated psycho-neurological findings, and likely prognosis of the seizure disorder, and the potential toxicity of the medication. (see Progress in Pediatric Neurology I, 1991;pp18-21). In adults, early treatment of a single seizure has been shown to prevent recurrence. (see Progress in Pediatric Neurology III, 1997;pp112-113).

MECHANISMS OF PHOTOSENSITIVE EPILEPSIES

Intermittent photic stimulation was performed in 21 photosensitive epileptic patients and the relation of the photoparoxysmal response (PPR) to the epilepsy syndrome was determined in a study at the National Epilepsy Center, Shizuoka Higashi Hospital, Shizuoka, Japan. The PPR was dependent on the quantity-of-light in 4 of 6 patients with photosensitive myoclonic epilepsy in infancy, and in 2 of 7 with symptomatic generalized epilepsy. Wavelength dependent PPR was elicited in 5 of 8 patients with photosensitive localization-related epilepsy, and in 4 of 7 with symptomatic generalized epilepsy. The type of pathophysiologic mechanism for eliciting PPRs by low-luminance photic stimulation was correlated with the epilepsy syndrome classification. (Takahashi Y, Fujiwara T, Yagi K, Seino M. Photosensitive epilepsies and pathophysiologic mechanisms of the photoparoxysmal response. Neurology Sept 1999;53:926-932). (Reprints: Dr Y Takahashi, Department of Pediatrics, Gifu University School of Medicine, 40 Tsukasa-machi, Gifu 500-8076, Japan).

COMMENT. The high frequency of photosensitivity in patients with severe myoclonic epilepsy of infancy might be related to the quantity-of-light-dependent (QLD) mechanism. In the above study, patients with QLD-PPRs have PPRs at frequencies from 6 to 33 Hz, whereas patients with wavelength-dependent (WLD) PPRs show responses at a narrower range (12-20 Hz). This suggests a higher level of photosensitivity in patients with QLD than WLD PPRs. Some photosensitive patients are thought to undergo an evolution and a change in mechanism with age.

SLEEP DISORDERS

SLEEP DISTURBANCES AND ATTENTION DEFICIT DISORDER

The relationship of sleep disorders, attention deficit hyperactivity disorder (ADHD), comorbidity associated with ADHD, and treatment with stimulant medications was determined using 2 sleep questionnaires completed by the parents in a study of children aged 6 to 12 years treated at the Hospital for Sick Children, Toronto, Canada. Sleep problems and factors associated with sleep difficulties were compared in ADHD unmedicated patients (n=79), medicated ADHD (n=22), and 2 control groups. The percentage of subjects with 1 or more sleep problems was highest in the medicated ADHD group (95.5%) and unmedicated ADHD group (86.1%); it was 82.9% in the clinical comparison group, and 55.5% in the nonclinical comparison group. Three sleep problems were evident by factor analysis: *dysomnias* (difficulty getting up, going to bed, and/or falling asleep; *parasomnias* (sleep walking, night waking, sleep terrors); and sleep related *involuntary movements.*