absence seizures and mental retardation. Resistance to therapy and learning disabilities are frequent complications of the syndrome of epilepsy with myoclonic absences (see <u>Propress in Pediatric Neurology III</u>, PNB Publ, 1997;p57).

Cortical myoclonus studied by magnetoencephalography is reported in 6 patients, one with Lennox-Gastaut syndrome, from Kyoto University School of Medicine, Japan (Mima T, Nagamine T, Ikeda A et al. <u>Ann Neurol</u> May 1998;43:598-607). Cortical myoclonus is myoclonus with preceding cortical electrical activity. Negative sharp waves at the precentral cortex are associated with myoclonus in LGS and Down syndrome, whereas surface positive activity precedes the EMG discharge in other cases. MEG permits more precise anatomical localization of cortical electomagnetic activity than does simultaneous EEG recording alone.

LEARNING AND ATTENTION DISORDERS

EARLY READING SKILLS AND ADULT BRAIN ORGANIZATION

Effects of word and pseudoword repetition on brain activation using PET and brain mapping were studied in 6 literate and 6 illiterate adults at the Hospital de Santa Maria, Lisbon, Portugal, and Karolinska Hospital, Stockholm, Sweden. Repetition of real words was 98% correct in literate and 92% correct in the illiterate group. Repetition of pseudowords was 84% correct in the literate and 33% correct in the illiterate group. Error analysis of 592 errors on pseudoword repetition showed 117 in literate and 475 in illiterate subjects. Repeating real words is a lexicosemantic and phonological process whereas pseudowords requires a pure phonological process. The required phonological processing for pseudoword repetition is dependent on the learning and knowledge of reading and writing. The absence of training in visual-phonological systems of reading and writing (orthography) in illiterate subjects explains their inability to repeat pseudowords and the lack of PET activation of areas involved in phonological processing. In pseudoword PET activation correlations, literate subjects activate several regions whereas illiterates activate only the right middle frontal region. Alterations in the functional organization of the adult brain of illiterates may be correlated with the absence of early learning experiences. (Castro-Caldas A, Petersson KM, Reis A, Stone-Elander S, Ingvar M. The illiterate brain. Learning to read and write during childhood influences the functional organization of the adult brain. Brain June 1998;121:1053-1063). (Respond: Professor A Castro-Caldas, Centro Estudos Egas Moniz, Hospital Santa Maria, 1600 Lisbon, Portugal).

COMMENT. Repetition of real words can be performed correctly by both literate and illiterate adults, and the process activates similar areas of the brain. In contrast, illiterates have difficulty repeating pseudowords, and different brain regions are activated. Learning to read and write during childhood influences the development of brain areas important in phonological processing of pseudowords.

From sensation to cognition is the title of a review article by Mesulam M-M, at Northwestern University Medical School (<u>Brain</u> June 1998;121:1013-1052). Attentional, motivational and emotional processes involved in the associative elaboration of sensory information and incorporation in cognition are discussed. The prefrontal cortex is critical in these attentional and motivational processes and the development of working memory.