

compared with those without MDE, but after adjustment for stress and childhood trauma, this association disappeared. Environmental factors such as childhood trauma and stress may shape the expression of this bidirectional relationship. (Modgill G et al. **Headache** Nov 15, 2011[Epub ahead of print])

LANGUAGE-LEARNING DISORDERS

AUDITORY PROCESSING DISORDER AND CORTICAL MALFORMATION

Researchers at Departments of Neurology and Speech, University of Campinas, Brazil assessed the auditory processing function in children with language-learning impairment in relation to malformation of cortical development. Thirty-two children (19 males), aged 8-15 years, were divided into three groups: Group I included 11 children with language-learning impairment and bilateral perisylvian polymicrogyria, a malformation shown to be associated with auditory processing disorders; Group II included 10 children with language-learning impairment and normal MRI; and Group III comprised 11 normal children. All patients had an IQ>80, only 1 had epilepsy, and 5 had pseudobulbar signs. Tests of auditory processing function, including the Random Gap Detection Test and Digits Dichotic Test, showed a statistically significant difference among the group. Groups I and II showed abnormalities in auditory processing when compared with the control group, and children in Group I were more affected than children in Group II. Perisylvian cortical malformation correlates with impairment of auditory processing function. This is expressed as difficulty in phonemic awareness, verbal comprehension, writing and reading, and processing of rapid auditory stimuli. (Boscariol M, Guimaraes CA, de Vasconcellos Hage, SR, et al. Auditory processing disorder in patients with language-learning impairment and correlation with malformation of cortical development. **Brain Dev** Nov 2011;33:824-831). (Respond: MM Guerreiro. E-mail: mmg@fcm.unicamp.br).

COMMENT. Cortical polymicrogyria malformation in the perisylvian regions may be associated with auditory processing dysfunction and language and learning disabilities, including dyslexia.

LANGUAGE IMPAIRMENT, MOTOR DELAY AND ROLANDIC EPILEPSY

Researchers at the Epilepsy Center and Department of Neurology, Maastricht University Medical Center, The Netherlands investigated a correlation between language, learning and locomotor impairments in a cohort of 48 children (6.5-13 years of age; 26 boys and 22 girls) with rolandic epilepsy referred to the Epilepsy Center between 2001 and 2009. EEG recordings and neuropsychological assessments were obtained within the same week. Parents completed a questionnaire on developmental milestones, attention, language, visuospatial skills, memory, reading, writing, and math. A learning efficacy quotient was calculated by dividing the educational level by months of education x 100,

and <100 score was an educational delay. Mean age at testing was 9 years 7 months; 39 were right-handed.

Parents reported significant delays in reading skills (words, 6 months; sentences, 8.6 months) in 23 (47.9%) children, delays in language expression in 18 (37.5%), problems in mathematics in 14 (29.2%), and motor development delay in 11 (22.9%), compared with the healthy population. There was a significant correlation between problems in motor development and delays in reading skills (words, $p=0.006$; sentences, $p=0.03$). Neuropsychological tests of reading performance indicated that 45% of children with rolandic epilepsy had a word reading quotient of <70 and 55% had a sentence reading quotient <70. (Overvliet GM, Aldenkamp AP, Klinkenberg S, et al. Correlation between language impairment and problems in motor development in children with rolandic epilepsy. **Epilepsy Behav** Nov 2011;22:527-531). (Respond: GM Overvliet. E-mail: overvlietg@kempenhaeghe.nl).

COMMENT. A high prevalence of language impairment in children with rolandic epilepsy is confirmed. Reading of sentences (semantic language skills) is more impaired than reading of words. Language delays are correlated with delays in motor milestones, and with the localization of epileptiform activity originating from the rolandic strip.

Reading performance in children with rolandic epilepsy correlates with epileptiform activity in sleep but not while awake. (Ebus SCM, Overvliet GM, Arends JBAM, Aldenkamp AP. **Epilepsy Behav** 2011;22:518-522). Reading sentences showed a negative correlation with the amount of nocturnal epileptiform activity in 26 children with rolandic epilepsy and a trend in this correlation for reading words. Nocturnal epileptiform activity also correlated negatively with Verbal IQ. No correlation was found between reading performance or Verbal IQ and the amount of diurnal epileptiform activity.

COGNITION IN DUCHENNE DYSTROPHY AND MUTATION SITE

Cognitive profiles of 42 Italian school-age children with Duchenne muscular dystrophy were studied in relation to the site of mutations along the dystrophin gene, distal vs proximal, involving or sparing the expression of Dp140, respectively. Full-scale IQ was a mean of 86.43 \pm 13.7 and 1 SD below the population average in the total group. Patients with distal located mutations were more severely affected compared to patients with proximal located mutations (not involving Dp140). Duchenne dystrophy patients with distal mutations had specific impairments in visuospatial functions and visual memory and greater impairment in syntactic sentence processing. (D'Angelo MG, Lorusso ML, Civati F, et al. Neurocognitive profiles in Duchenne muscular dystrophy and gene mutation site. **Pediatr Neurol** 2011;45:292-299). (Respond: Dr D'Angelo. E-mail: grazia.dangelo@bp.inf.it).

COMMENT. Children with Duchenne muscular dystrophy are intellectually impaired, with greater deficits in verbal compared to visuospatial cognition. Those with distal mutations on the dystrophin gene, involving Dp140 isoform, are most severely impaired intellectually.