

headache included fatigue and sleep deprivation (72%), excitement (65%), fever (64%), sun overexposure (62%), exercise (49%), ice cream (23%), anxiety, chocolate, and carbonated drinks. Children with migraine compared to those with tension headaches had more headaches triggered by ice cream, fear, or anxiety (28-36% cf 9-13%), more frequent abdominal pain (40% cf 11%), they took medication more frequently for pain relief, and were more often absent from day care. Pain-relieving factors, darkened room, vomiting, and medication, were more beneficial in migraine than tension headaches. (Aromaa M, Sillanpaa ML, Rautava P, Helenius H. Childhood headache at school entry. A controlled clinical study. Neurology June 1998;50:1729-1736). (Reprints: Dr Minna Aromaa, Department of Public Health, University of Turku, Lemminkaisenkatu 1, 20520 Turku, Finland).

COMMENT. Palpation of occipital muscles and temporomandibular joints may uncover causes of tension-type headaches in children, leading to effective therapy. Headache triggers are especially frequent in migraine sufferers. Relief may be obtained by sleep and rest (95%), darkened room (58%), vomiting (16%), eating (29%), and medication (83%), most commonly ibuprofen.

MIGRAINE TWIN STUDIES

The influence of genetic versus environmental factors in the etiology of migraine was investigated by studies of two samples of female twin pairs - 154 raised together and 43 raised apart since infancy, in a report from the University of Kansas Medical Center, Kansas City and the University of Minnesota, Minneapolis. Tetrachoric correlations for migraine were higher in monozygotic than in dizygotic twins, for both reared-together and reared-apart samples. The heritability estimate for migraine was 52%. Nonshared environmental factors (accidents, illness, stress) and measurement errors accounted for the remaining variance in liability to migraine. (Ziegler DK, Hur Y-M, Bouchard TJ Jr, Hassanein RS, Barter R. Migraine in twins raised together and apart. Headache June 1998;38:417-422). (Respond: Dr Dewey K Ziegler, Department of Neurology, University of Kansas Medical Center, 3901 Rainbow Blvd, Kansas City, KS 66160).

COMMENT. Genetic factors account for 50% of migraines in women, and environmental factors such as accidents, illness, and stress are responsible for the remaining variance in liability. These US figures are almost identical to previous studies in Finland and Sweden.

Headache pathogenesis (Welch KMA) and genetics of migraine (Gardner K, Hoffman EP) are reviewed in Current Opinion in Neurology June 1998;11:193-197 and 211-216. Brain excitability is the proposed basis for migraine, and causes of neuronal excitability include mitochondrial defects, disturbed magnesium metabolism, and a calcium channelopathy. Familial hemiplegic migraine has been related to mutations in a brain calcium channel gene residing in chromosome 19p or chr 1. The larger group of migraine disorders may be associated with dopamine DRD2 receptor genes.

SEIZURE DISORDERS

MOZART EFFECT ON SEIZURE ACTIVITY IN THE EEG

The "Mozart Effect" on epileptiform activity in the EEG of 29 patients, ages 3-47 years, was investigated using brain maps and computerized analyses at the University of Illinois Medical Center, Chicago, IL. The Sonata for Two Pianos in D Major (K.448) was selected as in previous cognitive and EEG studies, and the

patients had frequent focal or generalized epileptiform discharges in waking or comatose states. Numbers or durations of discharges were counted for 10 min each, before, during Mozart music, after Mozart, during control Pop music, and after Pop music. Significant decreases in EEG ictal pattern duration were seen during Mozart music in 23 (79%) patients, whereas control music had no effect. The effect was immediate or required 40-300 sec to manifest. A carry-over inhibitory seizure effect also occurred, with fewer discharges counted after Mozart. Theta and alpha activity decreased in central areas, while delta waves increased in frontal midline areas. A direct resonance effect of Mozart music on the cerebral cortex rather than a change in alertness or emotion was suggested, since some patients were in coma or status epilepticus. (Hughes JR, Daaboul Y, Fino JJ, Shaw GL. The "Mozart Effect" on epileptiform activity. Clin Electroencephalogr July 1998;29:109-119). (Reprints: Dr John R Hughes, Univ Ill Med Ctr, M/C 796, 912 S Wood St, Chicago, IL 60612).

COMMENT. Listening to Mozart, specifically the Sonata for Two Pianos in D Major, can lessen epileptiform activity in the EEG of patients with epilepsy, including those with status epilepticus and coma. In those with focal discharges, the effect is not limited to one temporal area, both left or right sided discharges being suppressed. The beneficial effects of Mozart and piano playing noted in children with learning problems may be extended to those with epilepsy.

DEPRESSION AND ANXIETY IN PEDIATRIC EPILEPSY

The frequency of depressive and anxiety-related symptoms among children and adolescents with epilepsy was determined in 44 patients, aged 7-18 years, at the State University of New York at Stony Brook, NY. Depression scores on a Child Depression Inventory and anxiety symptoms on a Child Manifest Anxiety Scale were significantly increased in 26% and 16%, respectively. No patient was previously diagnosed with a mood disorder, none was mentally retarded, and few had intractable seizures. (Ettinger AB, Weisbrot DM, Nolan EE et al. Symptoms of depression and anxiety in pediatric epilepsy patients. Epilepsia June 1998;39:595-599). (Reprints: Dr AB Ettinger, Epilepsy Management Program, Department of Neurology, Health Sciences Center T12-020, State University of New York at Stony Brook, Stony Brook, NY 11794).

COMMENT. Neuropsychological testing for depression and anxiety disorders can be important in the long-term management of children with epilepsy.

MYOCLONIC ABSENCE SEIZURES AND CHROMOSOME ANOMALIES

The relation between myoclonic absence-like seizures (MAS) and underlying chromosome disorders was evaluated in 14 patients at three centers in Italy. Seven (50%) had chromosome anomalies, including trisomy 12p in 2 and Angelman syndrome in 4. MAS onset was at 3 years (range 4 months to 6 years), and reduced awareness and rhythmic myoclonic jerks were associated with 2- to 3-Hz generalized spike-and-wave discharges. MAS with chromosome anomalies differed slightly from typical MAE, with earlier onset, shorter absences, and no increase in muscle tone. The GABRB3 gene may play a role in the genesis of MAS in children with mental retardation and chromosome anomalies. (Elia M, Guerrini R, Musumeci SA et al. Myoclonic absence-like seizures and chromosome abnormality syndromes. Epilepsia June 1998;39:660-663). (Reprints: Dr M Elia, Department of Neurology, OASI Institute (IRCCS), Via Conte Ruggero 73, 94018 Troina, Italy).

COMMENT. Chromosome analysis is indicated in children with myoclonic