Paediatr Suppl July 1997;422:106-111). (Respond: Dr DJ Cohen, Child Study Center, Yale University School of Medicine, 230 South Frontage Road, New Haven, CT 06510).

COMMENT. This review of the history of our understanding of Tourette syndrome serves as a model of changing concepts of neuropsychiatric disorders. Initially considered among neuroses and hysterias, TS is now treated as an example of genetic, developmental disorders, with a neuroanatomical and neurochemical basis, and more recently, an autoimmune disorder. Maturational changes in symptomatology are also complicated by comorbid OCD and ADHD, and the adverse effects of pharmacotherapy, especially stimulants. Methylphenidate is perhaps the primary environmental trigger for the onset or exacerbation of TS, and may also explain the apparent increased incidence and awareness of TS during the past 30 years.

Previous reports from the Yale group of TS investigators are reviewed in Progress in Pediatric Neurology III, PNB Publishers, 1997;pp314-5.

INFECTIOUS DISORDERS

ECHOVIRUS INFECTION AND BASAL GANGLIA EDEMA

The case of a 4-year-old girl with bilateral edema of the basal ganglia in association with echo type 21 viral infection is reported from the University Hospitals of Munster and Hamburg, Germany. Following an acute upper respiratory infection, the child developed viral meningitis, complicated by muscle hypotonia, ataxia, resting tremor, drowsiness, hyperesthesia, and speech dysarthria. MRI T2-weighted images showed hyperintense lesions of caudate nucleus, putamen, pallidum, and cerebellar peduncles, consistent with edema. Recovery began after 9 weeks, with a normal MRI and CSF at 3 months follow-up. (Freund A, Zass R, Kurlemann G, Schuierer G, Ullrich K. Bilateral oedema of the basal ganglia in an echovirus type 21 infection: complete clinical and radiological normalization. Dev Med Child Neurol June 1998;40:421-423). (Respond: A Freund MD, Abteilung fur Kinderund Jugendmedizin, St Franziskus-Hospital, Hohenzollernring 72, 48145 Munster, Germany).

COMMENT. The authors cite 15 similar reports of pediatric postinfectious acute encephalopathies with striatal lesions, mostly with unspecified respiratory infection and more severe course, 4 diagnosed at autopsy. Other acute causes of bilateral striatal lesions include trauma, hemolytic-uremic syndrome, carbon monoxide, methylmalonic acidemia, glutaric aciduria type 1, sulfite oxidase deficiency, MELAS, hypoxia-ischemia, and vasculitis (after Roig M et al. Bilateral striatal lesions in childhood. Pediatr Neurol 1993;9:349-358).

HEADACHE

HEADACHE TRIGGERS AND PREVALENCE

The prevalence and triggers of various headache types in Finnish children at school entry and age 6 years were investigated at the University of Turku, Finland. Questionnaires sent to 1132 families with 6-year-old children revealed 96 children with headache disturbing their daily activities. Migraine was diagnosed in 55% and tension-type headache in 36%. The headache group and an asymptomatic control group were interviewed and examined. Compared to controls, those with headache had significantly more bruxism, occipital and temporomandibular joint tenderness, and more travel sickness. Triggers of

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