levels for carbamazepine (Lenn NJ, Robertson M. Clinical utility of unbound antiepileptic drug blood levels in the management of epilepsy. Neurology May 1992; 42:988-990). (Reprints: Dr. Nicholas J. Lenn, Department of Neurology, Health Sciences Center T12-020, SUNY, Stony Brook, NY 11794-8121.)

COMMENT. These data suggest that some patients receiving phenytoin or valproate have unbound drug levels and ratios that may add information of importance to improvement of seizure control and reduction of side effects. The authors suggest that patients receiving PHT as mono- or polytherapy be monitored with either unbound blood level measurements only or have unbound blood levels regardless of the total level if there is an unresolved clinical problem. The expected unbound fraction of PHT is 8-12%.

In a 17-year-old girl with thrombotic thrombocytopenia purpura who was treated by plasmapheresis the free and total concentrations of phenytoin used for the treatment of a coincident seizure disorder were examined in the patient's serum and in the plasma removed by plasmapheresis. The free concentration was similar in both the plasma removed and in the patient's serum. Plasmapheresis did not significantly alter the serum concentration of phenytoin and dosage adjustments of phenytoin are therefore unnecessary when single volume exchanges are performed. (Tobias JD et al. Removal of phenytoin by plasmapheresis in a patient with thrombotic thrombocytopenia purpura. Clin Pediatrics Feb 1992; 31:105-108.) These authors question the value of plasmapheresis and single volume exchange as an appropriate therapeutic intervention for phenytoin overdose. (Correspondence: Dr. Tobias, Vanderbilt University, Department of Pediatrics, Division of Pediatric Critical Care, Medical Center North T-0118, Nashville, TN 37232.)

TOXIC DISORDERS

ASPARTAME AND ABSENCE SEIZURES

The effect of aspartame on epilepsy was studied in 10 children with previously untreated generalized absence seizures using a double blind challenge of 40 mg/kg aspartame as a single dose at the Children's Hospital, Halifax, Canada. Ambulatory cassette recording of the EEG and quantification of numbers and length of spike wave discharges on 2 consecutive days showed that the number of seconds spent in spike wave discharge per hour of recording was significantly increased following aspartame compared with the control day when the children received sucrose. (Camfield PR et al. Aspartame exacerbates EEG spike-wave discharge in children with generalized absence epilepsy: a double-blind controlled study. Neurology May 1992; 42:1000-1003.) (Reprints: Dr. Peter Camfield, IWK Children's Hospital, Box 3070, Halifax, Nova Scotia, Canada B3J 3G9.)

COMMENT. Anecdotal claims that aspartame may exacerbate epilepsy appear to have scientific validity based on this EEG double blind controlled study in 10 children with absence seizures.

In support of the FDA decision to clear aspartame for general consumption, excepting phenylketonuric children, a study of 126 apparently healthy children and adolescents showed that there were no clinically significant differences documented between the children taking aspartame and those taking sucrose for a 13 week period, regardless of age between 2 and 21 years. Aspartame appeared to be a safe sweetening agent for use by healthy children aged 2 or older. (Frey GH. J Toxicology Environmental Health 1976; 2:401.) However, studies of aspartame in children with neuropsychiatric problems are limited, and adequate data are not available to establish its safety and freedom from adverse effects. Until more specific investigations are completed to determine the effects of aspartame on seizure control it might be advisable to limit or avoid the ingestion of aspartame products in children with seizures and particularly poorly controlled absence seizures (Camfield et al. 1992). See Millichap JG. Nutrition, Diet and Child's Behavior. Charles C. Thomas, Springfield, 1986 for a review of the effects of aspartame on diseases of the nervous system in children.

ALCOHOL AND MENTAL DEVELOPMENT

In a prospective follow-up study at the University of Helsinki, Finland, 60 children exposed to alcohol in utero were assessed by a psychologist (Bayley Mental scale) and a speech therapist (Reynell Verbal Comprehension scale) at a mean age of 27 months. Forty-eight non-exposed children were also examined to set the -2 SD limit for subnormal performance. In children exposed to heavy drinking during the first trimester only, no definite effect on mental or language development was demonstrated. Children exposed throughout pregnancy scored significantly lower than those subjected to alcohol during the first trimester only. The diagnosis of fetal alcohol syndrome was made in 7 children, 1 exposed during the first and second trimesters, and 6 exposed throughout pregnancy. The lower limit for heavy drinking was more than 10 drinks a week, or more than 45 drinks per month. The drinking patterns of these mothers varied from 1 to 20 drinks per day. (Autti-Ramo I et al. Mental development of 2-year-old children exposed to alcohol in utero. J Pediatr May 1992; 120:740-746.) (Reprints: Dr. Ilona Autti-Ramo, Peuramaentie 1 H 18, 02700 Kauniainen, Finland.)

COMMENT. Fetal alcohol exposure causes a continuum of developmental defects ranging from mental retardation to slight developmental difficulties. The identification of mothers who are heavy drinkers in early pregnancy and effective counseling should help to preserve the developmental potential of the fetus.