

cytochrome C oxidase activity; I also showed ragged red fibers and subsarcolemmal clusters of giant mitochondria with paracrystalline inclusions. The findings indicated a dysfunction of mitochondrial energy metabolism and suggested that migraine is the result of a defect of brain oxidative metabolism. The authors conclude that neural energetic lability, especially if coupled with vascular metabolic dysfunction, could result - particularly under stressful conditions - in the neurological deficits of classical migraine. It was their hypothesis that a metabolic oxidative defect involving brain cells and possibly brain vessels represents the critical factor predisposing migraineurs to transient or persistent neurological deficits. (Montagna P et al. Migraine as a defect of brain oxidative metabolism: A hypothesis. J Neurol Feb 1989; 236:124-125).

COMMENT. The neurological deficits of migraine have been attributed to brain ischemia or a primary derangement of brain metabolism. The progression of the aura and the prodromal symptoms are difficult to reconcile with a purely vascular problem and changes in platelet function suggest a diffuse extracerebral metabolic disturbance. Migraine attacks sometimes occur as complications of mitochondrial encephalomyopathies which reinforces the suggestion that migraine is the result of a defect of brain oxidative metabolism.

DIET AND BEHAVIOR

ELIMINATION DIETS IN PRE-SCHOOL-AGED HYPERACTIVE BOYS

The effect of an experimental elimination diet was examined in 24 hyperactive boys aged 3.5 to 6 years at the Alberta Children's Hospital, and the Learning Center, Calgary, Alberta, Canada. The diet was broader than those studied previously in that it eliminated not only artificial colors and flavors but also chocolate, monosodium glutamate, preservatives, caffeine, and any substance that the families reported might affect the child. It was low in simple sugar (mono- and disaccharides) and dairy-free if an allergy to milk was suspected. A within-subject cross-over design was divided into 3 periods: a baseline of three weeks, a placebo-control period of three weeks, and an experimental diet period of four weeks. Approximately 42% (10) of the children showed 50% improvement in behavior on the elimination diet; an additional 16% (4) had lesser degrees of improvement (12%) with no placebo effect. Headache was less frequently reported during the diet period compared to placebo but not less than the base-line phase. Other nonbehavioral variables such as night awakenings and halitosis tended to improve during the dietary treatment phase. (Kaplan BJ et al. Dietary replacement in preschool-aged hyperactive boys. Pediatrics Jan 1989; 83:7-17).

COMMENT. These results of replacement diets indicate larger response rates than challenge studies with specific items. Further studies of additive-free and hypoallergenic-sugar-restricted diets are warranted in the management of attention deficit disorders with hyperactivity, and headache and sleep disorders, particularly in preschool children.