and irreversible impairment of brain and body growth are determined within the first trimester of pregnancy.

## METABOLIC AND DEGENERATIVE DISEASE

### LEIGH SYNDROME AND CYTOCHROME OXIDASE

Mitochondrial enzymes were studied in 5 unrelated children with neuropathologically proven subacute necrotizing encephalomyelopathy (Leigh syndrome) at the College of Physicians and Surgeons, New York. Four patients showed psychomotor regression, opthalmoparesis, nystagmus, optic atrophy, hypotonia, areflexia, ataxia, and abnormal breathing beginning in the second year and died after 3 to 4 years of an intermittently progresssive course. The fifth child was floppy at birth, regressed at 5 mos, and died of congestive heart failure at 7½ mos. All had lactic acidosis and autopsies showed typical symmetrical necrotic and cystic lesions in the brain stem and cerebellum. Muscle biopsy was normal by light microscopy but showed mitrochondrial changes on ultrastructural examination. A decrease in cytochrome c oxidase (COX) activity was found in brain, muscle, kidney, heart, liver and in cultured fibroblasts. The authors conclude that COX deficiency is an important cause of Leigh syndrome (DiMauro S et al. Cytochrome c oxidase deficiency in Leigh syndrome. Ann Neurol 1987:22;498-506).

COMMENT. The family history was negative in these patients but previous reports of autosomal recessive inheritance and occurrence in siblings are common. In one family from Quebec, 7 members in two generations had a mitochondrial encephalopathy and COX deficiency. Diverse clinical and pathological expressions of Leigh's disease in this family was explained by maternal transmission of varying proportions of mutant mitochondrial DNA. (Berkovic SF et al. Neurology 1987:37 (Suppl 1);223). Leigh syndrome, previously termed Leigh's disease and first described in 1951, appears to be nonspecific biochemically as well as clinically. In addition to the COX deficiency described above, defects of the pyruvate dehydrogenase multienzyme complex and pyruvate carboxylase have been reported. An inhibitor of the brain enzyme that catalyzes the formation of thiamine triphosphate has been found in the urine but the test is not diagnostic. Consistent early clinical features in the infantile cases are a quiet immobility with lack of crying and hypotonia.

### REYE SYNDROME AND ASPIRIN

Twenty-six cases of Reye syndrome occurring between 1973 and 1982 have been reviewed in relation to aspirin ingestion at the Children's Hospital, Camperdown, Australia (formerly the Royal Alexandra Hospital for Children in Sydney), where Reye first described his syndrome of encephalopathy and fatty degeneration of the viscera in 1963. The ages ranged from 3 mos to 7 yrs (median 22 mos). Only 5% of patients had ingested aspirin and 30% acetaminophen. For the period of this study, aspirin accounted for 0.3% and acetaminophen for 99.7% of all pediatric analgesic/antipyretic sales. Despite this lack of association of Reye syndrome with aspirin use, Reye syndrome has been as common in Australia as in the US (9 cases per/million children c.f. 10-20 cases/mil in US and 3-7/mil in UK). The authors conclude that the purported association of