

Trace mineral hair analysis in autistic children

**KATHRYN HENDERSON
SISTER ANNE BROOKS, SNJM
ALICE RAYNESFORD
JOHN E. UPLEDGER, D.O.**
Michigan State University—
College of Osteopathic Medicine
East Lansing, Michigan

This research evaluated the physiologic status of a group of autistic children, to determine if any physiologic disturbances were contributing to the emotional and developmental problems. Hair analysis was conducted as a screening measure to evaluate biochemical and nutritional status. Hair samples were tested for sixteen essential minerals and four toxic heavy metals, with the use of atomic emission spectrography.

Significant deviations from normal values were present in the trace elements, with one group of samples elevated in aluminum and phosphorus, another group deficient in iron and copper (two elements necessary for hemoglobin formation), and a third group deficient in several minerals involved with proper glucose metabolism (that is, calcium, sodium, potassium, manganese, zinc, chromium). No significant deviations from the normal values were observed in the heavy metals (that is, mercury, cadmium, lead, and arsenic).

This study shows indications of possible malnutrition, malabsorption, or improper nutrient utilization in this group of autistic children. It is presumptuous to assume that these nutrient deficiencies lead to clinical anemia or to hypoglycemia without further testing; however, the possibility remains that these nutritional imbalances are contributory to the children's inability to deal effectively with the world around them.