

development depends on input from muscle for survival. Naturally occurring death of motor neurons is accentuated by the removal of the target muscle. The findings in this case report suggest that motor neuron death in infantile spinal muscular atrophy may be secondary to muscle cell apoptosis.

LEARNING DISORDERS

NEUROLOGICAL TESTS IN PREDICTING LEARNING DISABILITIES

A battery of 12 simple neurological test items that differentiated normal from at-risk children at three and five years of age is described from the Departments of Pediatrics and Education, Wyler Children's Hospital, University of Chicago, IL. A follow-up of the five year olds at age seven showed a significant linear relation between scores on neurological tasks and the Wechsler Intelligence Test for Children. A poor neurological test score at age five correlated with a lower Full-scale IQ at age seven. The correlation for Verbal IQ was -0.42 and slightly lower than that for Performance IQ (-0.48). Both the school system's assessment and the neurological screening test accurately identified nearly all the children who needed special educational help at age seven. The neurological tests of predictive value for learning disabilities in preschool children included walking on toes and heels, tandem gait forward and backward, touch localization, restless movements, downward drift of outstretched hands, rapid alternating movements of forearms, hopping, alternate tapping of the fingers, and complex tapping. The percentages of at-risk children failing each neurological task were significantly lower than the normal group in almost all categories. (Huttenlocher PR et al. Discrimination of normal and at-risk preschool children on the basis of neurological tests. Dev Med Child Neur May 1990; 32:394-402).

COMMENT. The emphasis of attention deficits in the evaluation of children with learning disabilities has overshadowed the recognition of subtle or soft neurological signs in the evaluation of children who may need psychological testing and early remedial education. As a pediatric neurologist it is gratifying to review a report that demonstrates the importance of the neurological examination in children with potential learning problems.

Abnormal neurologic signs almost identical to those included in the above test battery have previously been correlated with hyperactive behavior and response to stimulant medication. In a study of 28 hyperactive children with learning disabilities and ADHD, those with the highest incidence of abnormal neurologic signs had the greatest degree of overactivity and were most likely to benefit from methylphenidate. (Millichap JG. Methylphenidate in hyperkinetic behavior: Relation of response to degree of activity and brain damage. In "Clinical Use of Stimulant Drugs in Children". Ed. Connors, CK. Amsterdam, Excerpta Medica 1974; 130-140).