

ATTENTION DEFICIT HYPERACTIVITY DISORDER

DEVELOPMENTAL COORDINATION DISORDER AND ADHD

The prevalence, comorbidity, and outcome of "developmental coordination disorder (DCD)" were studied in 7-10 year-old children at the Department of Child and Adolescent Psychiatry, Sahlgren University Hospital, Goteborg, Sweden. Motor examinations by teacher and physician comprised 11 tests that included, hopping, alternating movements, finger tapping, and finger imitation. Behavior was observed and scored according to attention deficit, hyperactivity, impulsivity, and distractibility. Moderate to severe symptoms of ADHD were noted in 50%.

Twenty children (5% of the population) - 18 boys, 2 girls - had severe DCD, and 35 (9%) - 29 boys, 6 girls - had moderate DCD; a DCD rate of 8-13% among boys and 1-3% in girls, and a male-female ratio of 4-7:1. Signs of DCD were stable during the follow-up period from 7 through 10 years of age. School dysfunction score, ranging from 0 to 10, was 1 in the non-DCD group, 4 in the moderate, and 5 in the severe DCD group. DCD with ADHD children had a mean score of 6. Both DCD and ODD were strongly comorbid with ADHD. DCD and ADHD, alone or combined, and showed an increased correlation with Asperger's disorder. DCD carried an increased risk of speech-language and reading problems, and DCD with comorbid ADHD had the lowest reading scores. (Kadesjo B, Gillberg C. Developmental coordination disorder in Swedish 7-year-old children. J Am Acad Child Adolesc Psychiatry July 1999;38:820-828). (Reprints: Dr Gillberg, Department of Child and Adolescent Psychiatry, Sahlgren University Hospital, S-413 45 Goteborg, Sweden).

COMMENT. The diagnostic criteria for *developmental coordination disorder*, listed in the 1987 DSM-III-R, include 1) marked impairments of performance in daily activities requiring motor coordination, having regard to age and IQ (delayed motor milestones, clumsiness, dysgraphia, and poor sports abilities); 2) impaired academic achievement or activities of daily living; and 3) not due to cerebral palsy or muscular dystrophy. The term "*developmental*" is, in fact, a misnomer, since the etiology in some cases may relate to birth anoxia, ischemia, and prematurity, or to postnatal factors. In the pre-DSM-III Psychiatric Association terminology, DCD would have been known as the "clumsy child syndrome," "motor-perception disorder," and "minimal brain dysfunction," now termed ADHD.

A careful neurologic examination of children presenting with ADHD will frequently uncover dyspraxias, synkinesias, motor impersistence, utilization behaviors, dysdiadochokinesia, choreiform movements, graphanesthesia, and other minimal abnormalities consistent with DCD. It is not surprising that children diagnosed as DCD would show comorbidity with ODD and problems in behavior, attention, and school achievement. In the next revised issue of the American Psychiatric Association DSM, perhaps the neurological signs characterized as DCD could be included among the criteria for the diagnosis of ADHD, at least as an additional sub-type. Neurologists should be more involved with the ADHD diagnostic criteria and their management.

SPEECH AND LANGUAGE DEVELOPMENT IN ADHD

Speech discrimination and phonological working memory were examined in children with ADHD (N=9), ADHD plus developmental coordination disorder (ADHD+DCD) (N=13), and 19 age-matched controls, in a study at the Neuropediatric Unit, Karolinska Institute, Stockholm, Sweden. Tests requiring monosyllabic discrimination showed no significant differences between subject groups,