

Motor Problems Detected in Kids at High Risk for Schizophrenia

An observational study from Denmark provides "convincing" evidence of impaired motor function, particularly problems with balance and manual dexterity, in children of parents with schizophrenia, the researchers say.

"Clinicians should be aware of motor symptoms and refer children with definite motor problems (below the fifth percentile) to a child physiotherapist," the study authors, led by Brigitte Klee Burton, MD, of the Child and Adolescent Mental Health Center, Copenhagen University Hospital, Denmark, write.

The study was [published online](#) March 23 in *Lancet Psychiatry*.

Using the Movement Assessment Battery for Children, Second Edition, the researchers investigated motor function in 514 7-year-old children in the Danish High Risk and Resilience Study. Participants included 198 children of parents with schizophrenia, 119 children of parents with bipolar disorder, and 197 children of parents without either disorder.

Children of parents with schizophrenia showed impaired motor performance compared with children of parents without schizophrenia in the subdomains of manual dexterity (mean difference, -1.42; 95% confidence interval [CI], -2.08 to -0.77; $P < .0001$) and balance (mean difference, -1.38; 95% CI, -2.03 to -0.72; $P < .0001$).

"Children with a familial risk of schizophrenia were about twice as likely to show definite motor problems (in fifth percentile or lower) than were children without a familial risk," report Dr Burton and colleagues. "Our results might indicate that motor deficits are a possible endophenotype for schizophrenia, indicating deviation of developmental characteristics of motor function," the authors note.

Children of parents with bipolar disorder did not show any significant

difference in motor performance in comparison with children of parents without bipolar disorder.

Early Warning Sign?

Anne Helseth Udal, MD, PhD, author of a [linked commentary](#), told *Medscape Medical News* that motor symptoms are "probably common" in children at risk for the neurodevelopmental subtype of schizophrenia "and may be an early warning sign in children with a family risk for schizophrenia.

"Large birth cohort studies report motor impairment before the age of 11 in a proportion of children who later develop schizophrenia," noted Dr Udal, of the Department of Mental Health and Addiction, Sorlandet Hospital, Arendal, Norway.

She believes motor symptoms in children at risk for the neurodevelopmental subtype of schizophrenia "deserve greater attention among clinicians. Motor problems may have a severe impact on children's daily life and self-esteem.

"To address motor problems as neurological symptoms may take the blame away from the child and facilitate accommodations. This may in turn improve long-time outcome by reducing psychological stress, and also facilitate early intervention," said Dr Udal.

Lena Palaniyappan, MBBS, PhD, director of the Prevention and Early Intervention Program for Psychoses at London Health Sciences Center and associate scientist at Lawson Health Research Institute, London, Ontario, Canada, noted that in the past 5 years, there has been "an emerging focus on the mental health of children whose parents have mental disorders.

"This study adds a novel angle by suggesting that the children of parents with schizophrenia but not bipolar disorder may also have a higher risk of developmental motor disorders.

"Given the large and representative sample that has been studied, this

paper deserves attention," said Dr Palaniyappan, who was not involved in the study.

"The findings are reminiscent of our own observations," he added, "wherein cortical folding, a marker of neurodevelopment, is much more extensively impaired in schizophrenia than in bipolar disorder. The impairments produced by the still unknown genetic factors of schizophrenia span across generations and across the domains of cognition, motor activity, and emotions."

Signs Subtle, Difficult to Detect

Sebastian Walther, MD, of University Hospital of Psychiatry, Bern, Switzerland, told *Medscape Medical News* the finding of the Danish group "fits nicely to a body of evidence from cohort studies and studies in at-risk populations, suggesting that motor developmental delay is associated with the risk of schizophrenia."

In an article [published](#) last year in *Schizophrenia Research*, Dr Walther's group found subtle motor abnormalities in children who had typical risk symptoms for psychosis.

"Notably, these children were from a population-based cohort, ie, they haven't presented to mental health facilities due to any complaints," he said.

"While these motor signs are frequent but subtle, the detection is challenging," said Dr Walther. "You need trained personnel or instruments to do so. Several groups in the field are trying to find easy, applicable instruments and tasks for screening. However, the specificity of these tests does not allow to draw definite conclusions during childhood. But it may help to follow-up subjects at a certain risk."

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