

Cognitive impairment seen in preschool children with epilepsy

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A recent study has shown that cognitive impairment is evident early on in preschool children with epilepsy, consistent with results of similar studies in older children. Age of onset of first seizure is a significant predictor of cognitive impairment according to this study—the first to evaluate cognitive impairment in children age three to six. The report is available in *Epilepsia*, a journal published by Wiley-Blackwell on behalf of the International League Against Epilepsy (ILAE).

Epilepsy is characterized by recurrent seizures that range from mild staring spells to major convulsions, and frequently develops in early childhood. Studies have found that in the U.S. alone there are more than 325,000 children under the age of 15 who are diagnosed with [epilepsy](#), with 45,000 new cases diagnosed each year. Medical evidence further suggests that early onset of seizures is a significant factor contributing to cognitive impairment in children.

For the present study, researchers reviewed medical data and psychological evaluations for 64 [preschool children](#) (3 to 6.11 years old) with active epilepsy in order to determine the frequency of cognitive impairment and the epilepsy-related factors contributing to the impairment. Children in the study group had a mean age of five, with seizure onset between 0 and 75 months. "Our study is the first to examine cognitive performance in preschool children with epilepsy," said lead researcher Kati Rantanen, a PhD candidate at the University of Tampere in Finland.

The study showed that the prevalence of epilepsy was roughly 3 per 1,000 children, which is consistent with prior studies in Finland and other developed countries. The team identified 27 children with focal seizures, 31 with generalized seizures, and 6 with unclassified seizure types. More than half of the children (64%) were receiving monotherapy of an anti-epileptic drug for [seizure](#) control. The seizures were well-controlled in 37% of children, partially controlled in 16%, and poorly controlled in the remaining 47% of participants.

Researchers determined cognitive function based on psychological evaluation, parental reports, and observations from daycare. The intelligence quotient (IQ) was used to measure cognitive function; children were classified as having normal IQ (IQ over 70) or with mild (50-69), moderate (35-49), or profound (less than 34) intellectual disability. In the preschool cohort, 50% of the children displayed normal cognitive function, 22% had mild cognitive impairment, and 28% showed moderate to severe intellectual disability.

The study found that early onset epilepsy is a risk factor for [cognitive impairment](#). The authors caution that lower (IQ) test scores in young children with epilepsy may be partly a reflection of development delay rather than mental disability. "Early intervention programs may help to improve cognitive and psychological outcomes in preschoolers with epilepsy," Rantanen concluded. "Further prospective research is needed to explore the developmental course of [children](#) with epilepsy."

More information: "Cognitive Impairment in Preschool Children with Epilepsy." Kati Rantanen, Kai Eriksson and Pirkko Nieminen. *Epilepsia*; Published Online: May 13, 2011 ([DOI: 10.1111/j.1528-1167.2011.03092.x](#)).

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