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Children with Newly Diagnosed Epilepsy at Risk for Cognitive Problems

ST. PAUL, Minn. August 12 –Children who have normal IQs before they experience a first seizure may also have problems with language, memory, learning and other cognitive skills, according to a study published in the August 12, 2009, online issue of *Neurology*, the medical journal of the American Academy of Neurology.

“Our study highlights the importance of testing children with epilepsy for possible cognitive problems soon after they are diagnosed with epilepsy in order to avoid these issues affecting them later in life, especially if they have additional risk factors,” said study author Philip Fastenau, Ph.D., Professor of Neurology at Case Western Reserve University School of Medicine and the Neurological Institute of University Hospitals in Cleveland, Ohio. The research was done in collaboration with Indiana University Purdue University in Indianapolis and Cincinnati Children’s Hospital Medical Center.

The study involved 282 school-aged children with an IQ of at least 70 who experienced their first seizure within the previous 3 months. They were then compared to 147 of their siblings without seizures. Scientists looked at whether the children with seizures also had other risk factors associated with cognitive problems, including multiple seizures, use of epilepsy drug, or signs of epilepsy on early tests of brain waves.

Of the children who experienced one seizure, 27 percent showed cognitive difficulties at or near the time of the first seizure and 40 percent of children who had additional risk factors showed signs of cognitive problems. A child with all four risk factors was three times more likely to experience cognitive problems by the first clinic visit compared to children who were seizure-free.

The study also showed that children who took epilepsy drugs had difficulties in processing speed, language, verbal memory and learning compared to children who did not take any epilepsy drugs.

“Children who take these medications should be closely monitored for cognitive problems resulting from the epilepsy drug,” said Fastenau. “Surprisingly, our study also found academic achievement in these children was unaffected around the time of the first visit about three months after the first seizure in this study, suggesting there is a window early in epilepsy for intervention to avoid hurting a child’s performance at school.”

“Because this study found cognitive problems at the time of the first seizure or soon after, it provides strong evidence that these cognitive problems can be attributed to underlying brain abnormalities that lead to the epilepsy, rather than from extended exposure to epilepsy drugs or the effect of numerous seizures,” said David Loring, Ph.D., of Emory University in Atlanta, who wrote an editorial accompanying the study.

The study was supported by the National Institutes of Health. *Source: American Academy of Neurology press release. Reviewed by Epilepsy Foundation Professional Advisory Board member, David W. Loring, Ph.D*