

## SEIZURE DISORDERS

### FEBRILE SEIZURE DURATION AND DEVELOPMENT

Members of the FEBSTAT multicenter Study Team assessed the distribution of febrile seizure (FS) duration in a cohort of 158 children with a first FS, and determined the association between FS duration and behavior and development. The information used to estimate seizure duration came from the ED record and parent interviews. The median duration was 4.0 minutes. Using a two-population assumption and model, a "short FS" population (mean duration 3.8 minutes) accounts for 82.3% of FSs, and a "long FS" population (mean duration 39.8 minutes), accounts for 17.7% of FSs. (The mean seizure duration in children with short and long first afebrile seizures is similar). Long FSs are significantly associated with developmental delay ( $p=0.01$ ) and delays and younger age at first FS ( $p=0.048$ ). The cutpoint between the two populations is at approximately 10 minutes, the dividing line chosen for prolonged or complex FS classification. The data lend support to using 10 minutes as the upper limit duration for a simple FS. (Hesdorffer DC, Benn EKT, Bagiella E, et al for the FEBSTAT study team. *Ann Neurol* July 2011;70(1):93-100). (Respond: Dr Hesdorffer, GH Sergievsky Center, Columbia University, 630 West 168<sup>th</sup> Street, P & S Unit 16, New York, NY 10032. E-mail: [dch5@columbia.edu](mailto:dch5@columbia.edu)).

COMMENT. The risk of epilepsy in children who have experienced at least one febrile seizure is 2%, according to a study involving 1706 children followed to age 7 years. Another 10% had at least one afebrile seizure, not meeting the definition of epilepsy (Nelson KB, Ellenberg JH. *N Engl J Med* 1976;295:1029-1033). In children with developmental delay and abnormal neurologic examination, whose first seizure was complex (longer than 15 min, multiple or focal), epilepsy developed at a rate 18 times higher than in children with no febrile seizures (92 vs 5 per 1000,  $p<0.001$ ). In the group with normal development and simple febrile seizure, epilepsy developed in 11 per 1000 (1.1%), moderate, but greater than for children with no febrile seizures (0.5%) ( $p=0.027$ ). Prior neurologic and developmental status and duration of the first febrile seizure are important predictors of epilepsy after febrile seizures.

In a Danish study of 50,000 persons with febrile seizures, the risk of epilepsy after febrile seizures at 23 years follow-up was 6.9%. Overall, for children with febrile seizures compared to those without, the rate ratio for epilepsy was 5.43. The risk was higher for those with a family history of epilepsy, cerebral palsy, or low Apgar scores at 5 minutes. It was particularly high shortly after the first febrile seizure, and when the febrile seizure is experienced early (<1 year age) or late (>3 years of age). (Vestergaard M et al. *Am J Epidemiol* 2007;165(8):911-918).

The risk of afebrile seizures and epilepsy developing in children with febrile seizures also correlates with the number of febrile seizure recurrences and with the electroencephalogram. (Lennox MA *Amer J Dis Child* 1949;868-882). (Millichap JG et al. *Neurology* 1960;10:643-653).