

Berg AT, Testa FM, Levy SR, Shinnar S. **Neuroimaging in children with newly diagnosed epilepsy: a community-based study.** *Pediatrics* 2000;106:527-532.

Background. Neuroimaging is generally considered a part of the evaluation of seizures and epilepsy. There is limited information about its current use in the initial evaluation of pediatric epilepsy and about its yield during the initial diagnosis of epilepsy. We describe the patterns in the use and yield of diagnostic imaging in children with newly diagnosed epilepsy in a community-based study.

Methods. Children were recruited when first diagnosed with epilepsy by participating physicians in Connecticut (1993-1997). Definitions for etiology and underlying epilepsy syndromes are as published by the International League Against Epilepsy.

Results. Of 613 children, 488 (79.6%) had imaging: 388 (63.3%) magnetic resonance imaging, 197 (32.1%) computed tomography scans, and 97 (15.8%) both. Half of children with idiopathic generalized epilepsy had imaging studies compared with 70% to 100% of children with other forms of epilepsy, depending on the specific type. Etiologically relevant abnormalities were found in 62 (12.7% of those imaged). Fourteen of these children had otherwise completely normal presentations and histories. Their abnormalities included tuberous sclerosis ($N = 4$), tumors ($N = 2$), an arteriovenous malformation later diagnosed as a tumor, a cavernous angioma, cerebral malformations ($N = 3$), and other abnormalities ($N = 3$). Thirteen of the 14 had partial seizures and 12 had focal electroencephalographic (EEG) findings. Only 1 had neither.

Conclusions. In children with newly diagnosed epilepsy, neuroimaging reveals a small but significant number of serious abnormalities not previously suspected. Most of these children have partial seizures or focal EEG abnormalities. Neuroimaging should be considered during the evaluation of children with newly diagnosed epilepsy, especially for those with neurologic deficits or partial seizures or focal EEG abnormalities that are not part of an idiopathic localization-related epilepsy syndrome.