

## IMPLICATIONS OF EPILEPSY: BEYOND SEIZURES

# Epilepsy and Learning Challenges

Most children with epilepsy have similar intellectual abilities to children without epilepsy. However, children with epilepsy have a greater chance of experiencing learning challenges than their peers.

### ■ Common Learning Challenges for Children with Epilepsy

- Paying attention and concentrating
- Understanding instructions
- Using information
- Describing things to other people
- Remembering things
- Working out how to do something new
- Organizing thoughts or tasks
- Feeling you have no energy to do things
- Feeling muddled or confused
- Feeling sad or tearful
- Feeling short tempered or grumpy
- Working out sums
- Writing or copying figures
- Developmental delays

### ■ Causes

- Frequency of seizures
  - A child who is experiencing frequent seizures, may not fully recover between seizures.
- Location of seizure activity in the brain

- When seizures are focused in a particular area of the brain, they may also affect functions controlled in that part of the brain.
- Type of seizures
  - When a child loses consciousness during a seizure, their mental functioning can be disrupted for up to several days.
  - Absence seizures appear to disrupt short-term memory for information presented immediately before the seizure.
  - Tonic-clonic seizures are followed by a period of drowsiness or inattentiveness.
  - Research has shown a correlation between cognitive/behavioural problems and focal dyscognitive seizures (previously called complex partial seizures).
- Medication side effects
  - Some anti-seizure medications may make some children tired, less alert, or hyperactive.
  - Someone taking more than one anti-seizure medication is more likely to experience negative side effects than someone taking a single anti-seizure medication.
  - Herbal remedies can interact with prescribed medications in ways that will disrupt learning.
- Age of onset
  - When a child begins to have seizures while their brain is still developing, the seizures can interrupt that stage of development.

## Epilepsy and Learning Challenges *continued*

- Type of epilepsy syndrome
  - Some epilepsy syndromes (e.g. Lennox-Gastaut Syndrome) involve learning and thinking difficulties.
- Epileptic (interictal) discharges
  - Some children appear to be seizure-free but may be experiencing epileptic discharges in the brain, called interictal discharges or sub-clinical seizures
  - Interictal discharges may produce restlessness, distractibility, inability to focus, decreased capacity for taking in new information, and behavioural disturbances.
- The underlying neurological problem causing the seizures can also impact learning and behaviour.
- Other related conditions
  - There are a number of other conditions that are more likely to occur in people with epilepsy than the general population, including Attention-Deficit Hyperactivity Disorder (ADHD), Learning Disabilities, and Autism Spectrum Disorders.

\* For strategies to help a child with attention deficits, memory problems, or trouble with organization and planning, see our *Spark* sheets: Epilepsy and ADHD, Epilepsy and Memory (Children), and Helping Children with Organization and Planning.

*Adapted from Children and Learning (Epilepsy Toronto) and Cognitive, Behavioural and Social Co-Morbidities in Children with Medically Refractory Epilepsy (Mary Lou Smith).*

**Additional Sources:**

Canadian Epilepsy Alliance. *Learning through Storms: Epilepsy and Learning.*

I Elliott, L Lach, M Smith. (2004). *Epilepsy Impact on the Life of a Child.* Lumina, Fall, 4-5.

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