

Appendix 9

Epilepsy management

Epilepsy management is complex. Epilepsy may evolve over time as the individual gets older, so the evaluation of the condition and its management is ongoing. Since clinical expertise can vary, it is important to know that information about management in this book may be different to practice at different hospitals and treatment centers. Management is not “one size fits all”; it must be customized.

The main goal of epilepsy management is to *prevent, reduce, or stop* seizures. Some related Important terms to understand include:

- **Seizure control:** Effective epilepsy management that results in a decrease in frequency, severity, and/or duration of seizures.
- **Seizure freedom:** A set period without any seizures; the ultimate goal of epilepsy management.
- **Remission:** A state where an individual with epilepsy is seizure-free for at least six months.
- **Resolved:** A state where an individual with epilepsy has remained seizure-free for the last 10 years, with no antiseizure medications for the last 5 years, or the individual had an age-dependent epilepsy syndrome and is past the applicable age for this diagnosis (i.e., self-limited neonatal or infantile epilepsy syndromes).

Why manage epilepsy?

Management of epilepsy is important for the following reasons:

- **To protect the brain from damage:** Epileptic seizures may lead to damage of areas in the brain, especially when they are prolonged or uncontrolled.
- **To protect organs and body systems from damage:** Epileptic seizures (especially those with motor signs) may lead to injuries and lesions in various body organs (e.g., kidneys or liver), or body systems (e.g., cardiovascular or musculoskeletal systems).
- **To prevent status epilepticus:** This condition, in which seizures last more than five minutes or occur in close succession (one after the other, without a return to baseline), is life-threatening.
- **To prevent SUDEP (sudden unexpected death in epilepsy):** This rare complication of epilepsy is named to describe the death of an individual with epilepsy when no other cause of death can be found.
- **To ensure safety and prevent injury:** Individuals with epilepsy are at an increased risk of accidental injuries from falls, motor vehicle accidents, and accidents around water, fire, and in other activities.
- **To improve quality of life:** Seizure control correlates with the ability to participate fully in life, including social activities, physical activities, education, employment, driving, and independent living.

How is epilepsy managed?

The management of epilepsy generally includes:

- **Pharmaceutical treatments,** involving the use of antiseizure medications, either as monotherapy (one medication) or polytherapy (more than one medication).

- **Non-pharmaceutical treatments**, involving the ketogenic diet, neuromodulation (repetitive electrical discharges administered through a device), and epilepsy surgery
- **Other medications or supplements**, including vitamins or medical cannabis

Pharmaceutical treatments are generally tried first. However, some epilepsy syndromes and drug-resistant epilepsy are best managed with non-pharmaceutical treatments or other medications or supplements.

Pharmaceutical treatments, non-pharmaceutical treatments, and other medications or supplements can be used with the same individual and at the same time.

Management options for epilepsy are shown in Table A9.1.

Table A9.1 Management options for epilepsy

Management	Description	Indications for use
Pharmaceutical treatments		
Monotherapy	One antiseizure medication (may try a different medication if the first doesn't work)	All types of epilepsy, generally tried first
Polytherapy	More than one antiseizure medication given at the same time (may try different combinations)	All types of epilepsy, when monotherapy does not work
Non-pharmaceutical treatments		
Ketogenic diet	Specialized diet with a very low amount of carbohydrates	Used when polytherapy does not work, or when the epilepsy type, epilepsy cause, or epilepsy syndrome is more responsive to non-pharmaceutical management
Neuromodulation	Repetitive electrical discharges administered through a device (for the management of epilepsy, these devices are surgically implanted)	
Epilepsy surgery	Surgery to areas of the brain where seizures are thought to start or spread to	
Other medications and supplements		
Medications	Medications other than antiseizure medication include: <ul style="list-style-type: none"> • Immunotherapies (treatments that alter the immune system), • Steroids (medications with anti-inflammatory properties) • ACTH (a type of hormone therapy). 	Used when the epilepsy type, epilepsy cause, or epilepsy syndrome is known to be responsive to a particular medication
Vitamins	Dietary supplements	Used in epilepsy syndromes known to be responsive to a particular vitamin
Medical cannabis	A pharmaceutical form of the cannabis plant.	Used in epilepsy types and epilepsy syndromes known to be responsive to cannabis

More information on epilepsy is available in the book *Epilepsy* in the **Gillette Children's Healthcare Series**.