

Seizures booklet



Table of contents

Seizures	3
Epilepsy causes and signs.....	3
Helping your child’s doctor.....	4
Your child may have more than one type of seizure.	4
6 Types of generalized seizures.....	4
Focal seizures happen different ways.....	5
Seizure first aid	6
What to know about seizure medicines	6
Medicines do not cure epilepsy.....	6
Medicines only work when you follow directions	7
May cause drowsiness.....	7
Medicines come in tablets, sprinkles, capsules or syrup	7
Before taking any new medicine	7
Medicine guidelines.....	7
Never guess about medicines	7
If you miss a dose	8
Storage and disposing of medicines.....	8
Generic substitution.....	8
Naming new medicines.....	8
Differences between brand and generic medicines	8
Medicine blood levels	9
Common side effects of seizure medicines.....	9
FDA WARNING: Some seizure medicines may cause thoughts of suicide.....	10
Common seizure medicines.....	11
Seizure medicines uses and side effects.....	12
Rescue seizure medicines	19
Seizure safety precautions.....	21
Sudden unexpected death in epilepsy (SUDEP)	21
Reducing the risk of SUDEP.....	22

Seizures

The brain sends electrical signals to all parts of the body. Each signal follows a special pathway. A seizure happens when the electrical signals get mixed up. This means they do not meet or go to the right place in the brain. When the signals stop, they give off a sudden burst of electricity. This burst can stay in one area of the brain or can spread to the other parts of the brain. This causes the muscles to twitch, shake, or jerk. The body cannot control these movements.

We call these movements a clinical seizure.

Epilepsy causes and signs

Epilepsy means that your child:

- Had 2 or more unprovoked seizures.
- Had a single seizure with the chances of additional seizures high, based on the history and EEG.

Different causes for seizures:

- Brain has not developed normally.
- Child had seizures as a baby.
- There is a family history of seizures.
- Testing shows high possibility of seizure activity.

Signs of seizures

- Uncontrollable shaking, twitching, or jerking.
- Changes in the way child acts.
- Changes in how awake child feels.
- Brief staring spells.
- Changes in breathing and heart rate.
- Loss of bowel or bladder control.

Seizures can:

- Be very quick and hard to spot.
- Cause twitching, jerking, or stiffness of any or all parts of the body.
- Cause your child to be unresponsive or lose consciousness.



Most children with epilepsy have normal appearing brains. Seizures can happen without any known cause. Many times we never know why the brain signals get mixed up.

Helping your child's doctor

Telling us all about your child's seizure is very important. There are many different kinds of seizures. Different seizures need different medicines. In order to choose the right medicine, your doctor needs to know the kind of seizure your child has.

Sometimes it can be very difficult to tell seizures apart. Information from medical tests can help us identify the seizure type, but many times parents give us the best information. The better you can describe the seizure, the easier and quicker your doctor can start controlling it.

Your child may have more than one type of seizure.

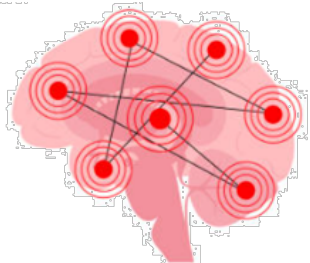
- If you see more than one kind, be sure to describe each one.
- Write down the type you think it is.
- You can also track your child's seizures by downloading apps to your smart phone.



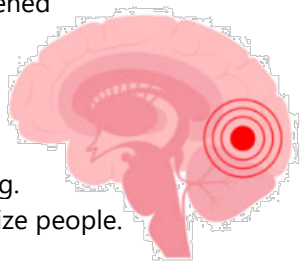
You can send videos of your child having a seizure to the patient portal at mycookchildrens.org. You will need to download the app from google Play or AppStore.

6 Types of generalized seizures

Seizure type	What to look for in your child
1. Absence Was called "Petit Mal" seizure	<ul style="list-style-type: none">• Has a blank stare that suddenly starts and stops. This lasts only a few seconds.• Blinks really fast.• Has some chewing movements of the mouth.• Does not know what is happening.• Quickly returns to normal when seizure stops.
2. Atonic/Drop	<ul style="list-style-type: none">• Suddenly falls.• Soon returns to normal and can stand or walk.
3. Myoclonic	<ul style="list-style-type: none">• Has sudden jerks. This can happen in one part of the body or all over.• Spills or drops things or falls.• Has these seizures soon after waking up.
4. Tonic	<ul style="list-style-type: none">• Full body stiffening.• Usually lasts less than 30 seconds, but may last longer.

Seizure type	What to look for in your child
5. Infantile spasms Starts between 3 months and 2 years	<p>Your baby may have several quick, sudden movements. We call these movements "clusters".</p> <p>If baby is sitting up:</p> <ul style="list-style-type: none"> • Head falls forward. • Arms bend forward or extend backwards. • Bends forward from the waist. <p>If baby is lying down:</p> <ul style="list-style-type: none"> • Knees draw up. • Arms and head bend forward. It looks like the baby is reaching for something. • Neck, arms, and legs stretch out and get stiff.
6. Generalized Tonic-Clonic Was called "Grand Mal" seizure	<ul style="list-style-type: none"> • Suddenly cries, falls, or get stiff. • Has muscle jerks. • Has trouble breathing. • Stops breathing and turns blue. • Normal breathing usually starts when seizure is over. • Loses consciousness. <p>Wets pants or has a bowel movement</p> 

Focal seizures happen different ways

Focal seizure	<ul style="list-style-type: none"> • Jerking starts in the one arm, leg or face moves from one area of the body to another. • Seizures can last a few minutes, but after the seizure, the confusion can last longer. • Child has no memory of what happened during seizure period. • Child gets confused or dazed. • Child mumbles, acts clumsy. • Runs or appears afraid. • Has blank stare, followed by chewing. • Cannot answer questions or recognize people. • Picks at clothing or objects. • Tries to take off clothes. • Struggle's or fights if held. 
----------------------	---

Focal seizures progressing to generalized seizure activity usually start the same as above. But they are followed by whole body shaking similar to a generalized tonic-clonic seizure.

Seizure first aid

The brain sends out signals to all parts of our body. A seizure happens because the signals are not working right. Some seizures easy to see. The person may fall down and start shaking all over. Some seizures look different. The person may begin:

- Staring
- Picking at an object
- Chewing, smacking their lips
- Moving a body part over and over

What to do	How to do it
Protect child	<ul style="list-style-type: none">• Move hard or sharp objects away from area.• If child is on ground, place something soft under the head. Pillow, towel, or rolled up jacket works well.• Some people may start walking during a seizure. Gently stop them from going out a door or into street.• Do not hold child down.
Nothing in mouth	<ul style="list-style-type: none">• Do not try to force anything into mouth.• It is impossible to swallow the tongue when having a seizure.
Time seizure	<ul style="list-style-type: none">• Look at a clock or watch as soon as you see the seizure.• Most seizures stop within 5 minutes.• If seizure lasts longer than 5 minutes, or if several seizures happen in a row, call 911.
Check breathing	<ul style="list-style-type: none">• During seizures, a person may briefly stop breathing and turn blue.• Most of the times, we do not need to do CPR.• Breathing and color will get better after the seizure.• When the seizure stops, if there is no breathing or no pulse, call 911 and start CPR.
Rest after seizure	<ul style="list-style-type: none">• After seizure is over, let child rest.• Stay with the child and offer comfort.• If in a public place, offer to phone a taxi, friend, or relative to take the person home.

What to know about seizure medicines

Medicines do not cure epilepsy

- Medicines only stop or lessen seizures.
- Different types of medicines work on different types of seizures.
- Sometimes one seizure medicine works well. Sometimes your child will need several different medicines.

- Sometimes we will need to change the dose of medicines as your child grows.
- Often you start with a low dose of seizure medicine and slowly work up to a normal dose.

Medicines only work when you follow directions

- DO NOT stop seizure medicines without first talking to your child's doctor.
- Seizures can start if you stop the medicine too fast.

May cause drowsiness

- Do not drink alcohol or take illegal drugs.
- Do not take any sleeping medicine without talking to your doctor first.

Medicines come in tablets, sprinkles, capsules or syrup

- Shake liquids well.
- Some medicines can upset your child's stomach. Taking medicine with food can help. Talk to your doctor or pharmacist first to make sure food will not change how the medicine works.
- Do not swallow chewable tablets without chewing first.

Before taking any new medicine

Always tell your child's doctor if you are taking:

- Vitamins
- Cold and fever medicines
- Herbs
- Medicines you can buy without prescriptions



You can find more information about seizure medicines on www.epilepsy.com

Medicine guidelines

Never guess about medicines

- If you do not understand or are not sure what to do, call us or talk to your pharmacist.
- Always give the right dose at the right time.
- Your child's doctor will tell you the dose of medicine to give and when to give it. Do not give your child a different dose or at a different time.
- For liquid medicine: Always use medicine-dosing cup, dosing syringe, or dosing spoon. Never use a regular spoon.

If you miss a dose

- If you miss a dose, give it as soon as possible.
- If it is more than half the time to the next dose, skip the missed dose.
- Do not double up on dosing.

Storage and disposing of medicines

- Keep all medicine away from children.
- Never share your child's medicine with anyone.
- Store your medicines in a closed container at room temperature, away from heat, moisture, and direct light. Some medicines need to be refrigerated.
- Do not give expired medicines. Ask your pharmacist what to do with expired medicines

Generic substitution

Most medicines have 2 names, the brand name and the generic name.

Brand name: The drug company gives a special brand name to each medicine they develop. Brand names are usually short and easy to remember.

Generic name: This name has to do with the chemicals that make the medicine work. Many chemical names are long and hard to remember.

Naming new medicines

A drug company makes a new medicine. They give this medicine a brand name. At first, this is the only company that can make and sell the new medicine. At some point, other drug companies can make this medicine. They cannot use the brand name, so they call the drug by its chemical name. We call this the generic medicine. Example: Tylenol is the brand name. Acetaminophen is the generic name.

Differences between brand and generic medicines

Generic medicines may look different and are usually cheaper. Some of the chemicals used to make the medicine are prepared differently.



Sometimes pharmacies will substitute generic medicines. Pharmacies will substitute generic medicines unless your doctor specifies on your child's prescription that the brand name is necessary. Please talk with your doctor if generic substitution is suitable for your child.

Always talk to your doctor first before you change from a brand name seizure medicine to a generic medicine.

Medicine blood levels

The blood level is the amount of seizure medicine in the blood. Your doctor will decide on:

- The dose of seizure medicine that your child needs.
- How often to take it.

To stop or lessen a seizure, your child will need the right seizure medicine and the right blood level of this seizure medicine. It may take several days or weeks for a medicine to reach the right blood level. The blood level can become too low to control seizures if your child stops taking the seizure medicine or takes the seizure medicine at different times.

Many seizure medicines do not have blood levels that are routinely checked. It is very important for your child to take the seizure medicine exactly as ordered.



It is very important for your child to keep taking their medicine, even if they have not had a seizure for a long time. Not having a seizure means the medicine is working. It does NOT mean your child no longer needs it.

Doctors usually start medicine slow and increase the dose on a daily or weekly basis:

- We try to keep dose as low as possible to lessen side effects, but still control seizures.
- The dose of medicine depends on your child's weight and age.
- Sometimes dosing also depends on how well your child's kidneys and liver are working.

If your child continues to have seizures, it does not mean the medicine is not working. We may need to change the amount, times, or type of your child's medicine. Sometimes after a long period of control with medicine, a child may start having seizures again. This does not usually mean the epilepsy is getting worse.

Common side effects of seizure medicines

All seizure medicines have possible side effects. Please tell your child's doctor if they have any of the following:

What to look for	What side effect does
Feelings and emotions	<ul style="list-style-type: none">• Thoughts of suicide• Mood changes• Behavior problems
Alertness	<ul style="list-style-type: none">• Sleepiness, usually goes away after 2 to 3 weeks on medicine• Loss of energy• Changes in ability to concentrate or focus on things• Difficulty sleeping• Extreme hyperactivity

What to look for	What side effect does
Head	<ul style="list-style-type: none"> • Headache that doesn't go away • Swollen glands in neck • Yellowish color noted on eyes
Mouth and throat	<ul style="list-style-type: none"> • Swollen or tender gums • Sore throat and/or ulcers in mouth
Stomach	<ul style="list-style-type: none"> • Severe nausea and vomiting • Appetite changes • Color change noted in urine or stool (usually dark color)
General	<ul style="list-style-type: none"> • Yellowish color noted on skin • Unexplained fever or chills • Unusual bleeding or bruising • Rash (may be small dots to large red patches) • Joint pain • Symptoms of infection (fever, cough, etc.) • There may be an increase in feelings of sadness, call your doctor immediately.

Call your doctor immediately if your child has a skin rash or allergic reaction

FDA WARNING: Some seizure medicines may cause thoughts of suicide

The U.S. Food and Drug Administration states companies that make some seizure medicines must include this warning as a potential side effect. Please call your neurologist immediately if you see any of the following in your child:

- Thoughts or attempts of suicide, violent behavior, or extreme changes in behavior.
- New or worse irritability, anxiety, depression, or an unusual mood.

Common seizure medicines

Brand name	Generic name	Notes
Aptiom®	Eslicarbazepine acetate	
Banzel®	Rufinamide	
Briviact®	Brivaracetam	
Depakote®	Valproic Acid	
Dilantin®	Phenytoin	
Epidiolex®	Cannabidiol oral solution	
Felbatol®	Felbamate	
Fintepla®	Fenfluramine	
Fycompa®	Perampanel	
Keppra®	Levetiracetam	
Lamictal®	Lamotrigine	
Lyrica®	Pregabalin	
Mysoline	Primidone	
Neurontin®	Gabapentin	
Onfi®	Clobazam	
Luminal Sodium	Phenobarbital	
Sabril®	Vigabatrin	
Symmetrel®	Mantadine	
Tegretol® /Carbatrol®	Carbamazepine	
Topamax®/Trokendi XR®	Topiramate	
Tranxene®	Clorazepate	
Trileptal®/Oxtellar XR®	Oxcarbazepine	
Vimpat®	Lacosamide	
Zarontin®	Ethosuximide	
Zonegran®	Zonisamide	

NOTE: This is general educational information. It reviews basic medicine information for seizures and epilepsy. This medicine information does not cover all possible uses, actions, precautions, side effects, or interactions of these medicines. Some of these medicines are not FDA approved to be used in

children. Some are not FDA approved for certain seizure types. Please call your doctor if you have any questions or concerns about any of these medicines.

Seizure medicines uses and side effects

Brand name Generic name	Medicine used for	Possible side effects	Possible serious effects
Aptiom® Eslicarbazepine acetate	<ol style="list-style-type: none"> Used in combination with other medicines for focal seizures Comes as a tablet 	<ul style="list-style-type: none"> Stomach pain or nausea Feeling dizzy or sleepy Headache Blurred vision 	
Banzel® Rufinamide	<ol style="list-style-type: none"> Used for treatment of generalized seizures associated with Lennox/Gastaut syndrome. Your child can take this with other medicines. Comes as a tablet. 	<ul style="list-style-type: none"> Feeling light headed, dizzy, or sleepy. Blurred vision. Headache. Stomach pain or nausea. Take with food. Heart problems. 	<ul style="list-style-type: none"> Changes in urination. Rash: Call your child's doctor immediately. Fever: Call your child's doctor immediately.
Briviact® Brivaracetam	<ol style="list-style-type: none"> Combination with other medicines for treatment of focal and generalized seizures. Comes in tablets and liquid. 	<ul style="list-style-type: none"> Sleepiness Dizziness Nausea Mood changes 	<ul style="list-style-type: none"> Decreased white blood cell count
Epidiolex® Cannabidiol oral solution	<ol style="list-style-type: none"> Seizures associated with Lennox-Gastaut Syndrome or Dravet Syndrome For treatment of tuberous sclerosis complex Comes as a liquid 	<ul style="list-style-type: none"> Stomach upset, diarrhea, and vomiting Decrease in appetite and weight loss Sleepiness, generalized weakness, low energy, and difficulty sleeping 	<ul style="list-style-type: none"> Increased liver enzymes: dark urine, light colored stools, yellowing skin or eyes Decreased red blood cell count Increased risk of infection or fever
Felbatol® Felbamate	<ol style="list-style-type: none"> Used with or without other seizure medicine for focal seizures and seizure associated with Lennox-Gastaut Syndrome Comes as a liquid and a tablet 	<ul style="list-style-type: none"> Stomach upset, constipation, diarrhea, and vomiting Headache, sleepiness, or low energy 	<ul style="list-style-type: none"> Call your doctor immediately if you see any of the following: Skin rash with red or purple "splotches" on Signs of infection that happen and do not go away Increased bleeding of gums, nosebleeds, or bruising Dark urine, light-colored stools, yellowing of skin and eyes

Brand name Generic name	Medicine used for	Possible side effects	Possible serious effects
Fintepla® Fenfluramine	<ol style="list-style-type: none"> Used with and without other seizure medicine for seizures associated with Dravet Syndrome Comes as liquid 	<ul style="list-style-type: none"> Decreased appetite Diarrhea Weight loss Sleepiness 	<ul style="list-style-type: none"> Allergic reaction High blood pressure Changes in eyesight, red eyes, eye pain or very bad eye irritation
Dilantin® Phenytoin	<ol style="list-style-type: none"> For generalized tonic-clonic, focal seizures, and focal seizures with secondarily generalized seizures. May take with other medicines. Comes as capsules, chewable tablets, or as a liquid. 	<ul style="list-style-type: none"> Long-term use can lead to loss in bone density. Changes in taste. Dizziness, Loss of balance when walking Nausea and vomiting Headache Constipation Dry mouth Sleeplessness Decreased appetite 	<ul style="list-style-type: none"> Cosmetic side effects such as thickening of gums and increase in body hair are common. Thickening of gums can be reduced by good dental care with brushing and flossing and dental visits. Allergic skin rash: Call your neurologist immediately.
Depakote® Divalproex Sodium Depakene® Valproic Acid	<ol style="list-style-type: none"> Used for treatment of generalized tonic-clonic myoclonic, atonic, focal, and absence seizures. Your child can take it as a single medicine or with other medicines. Comes as coated tablets, sprinkle capsule, or liquid Depakene®. 	<ul style="list-style-type: none"> Stomach pain or nausea (can take with food). At higher doses, you may have fine tremors or shakiness of the hands. Increased appetite and weight gain. Increased hair loss or thinning; usually stops after a few months and hair returns to original thickness. Birth defects: Fetal malformation, including 10% risk of neural tube defects – spina bifida. 	<ul style="list-style-type: none"> Liver damage – Patients with pre-existing liver disease should not take the medicine. Rare cases of liver failure resulted in death. Easy to bleed. Decreased white blood count; red blood cell count or both. Pancreatitis. Decreased platelet count/easy bruising. Polycystic ovary disease.

Brand name Generic name	Medicine used for	Possible side effects	Possible serious effects
Fycompa® Perampanel	<ol style="list-style-type: none"> Used with other seizure medicines for partial and generalized seizures. Comes in a tablet and may take with or without food. You should take this medicine at night time. This medicine interacts with several different medicines. Please check with a pharmacist before starting any new medicines or herbal medicines. 	<ul style="list-style-type: none"> Dizziness Sleepiness Irritability Headache Blurred vision Nausea Weight gain Abnormal bruising Muscle and joint pain 	<ul style="list-style-type: none"> Increased risk of suicidal thoughts Changes in mental status Rash and fever at the same time.
Keppra® Levetiracetam	<ol style="list-style-type: none"> Used in combination with other medicines for focal seizures and some generalized seizures. Comes in tablets and as a liquid. 	<ul style="list-style-type: none"> Headaches Drowsiness Dizziness Behavior disturbance Hallucinations 	
Lamictal® Lamotrigine	<ol style="list-style-type: none"> Mainly used for control of focal seizures and some generalized seizures (generalized atonic tonic-clonic, absence, and myoclonic). Comes in chewable tablets or regular tablets. May have a line down the middle to break in half easily, if needed. 	<ul style="list-style-type: none"> Headaches Nausea and vomiting Dizziness, sleepiness, awkward balance, double vision and blurred vision 	<ul style="list-style-type: none"> Skin rash may occur when taking lamotrigine and you must report it to your doctor immediately. Severe allergic reactions including Stevens-Johnson syndrome have occurred. This is common in children who are also taking Depakote.
Lyrica® Pregabalin	<ol style="list-style-type: none"> Mainly used with other medicines to control focal seizures. Comes as a capsule. 	<ul style="list-style-type: none"> Headaches Nausea and vomiting Feeling light-headed, sleepy, or dizzy Dry mouth Feelings of sadness or happiness. 	

Brand name Generic name	Medicine used for	Possible side effects	Possible serious effects
Mysoline® Primidone	<ol style="list-style-type: none"> Used in combination with other seizure medicines or alone for treatment of generalized tonic-clonic, psychomotor, and focal seizures Comes as a tablet 	<ul style="list-style-type: none"> Sleepiness, low energy, mood and behavioral changes Upset stomach, vomiting, and decreased appetite 	<ul style="list-style-type: none"> Call your doctor immediately if you see any of the following: Skin rash, hives, or blisters Changes in eyesight, unable to control eye movements, or changes in balance
Neurontin® Gabapentin	<ol style="list-style-type: none"> Used in combination with other seizure medicines or alone for treatment of focal seizures Comes as a liquid, a tablet, and a capsule 	<ul style="list-style-type: none"> Sleepiness, low energy, or irritability Dizziness or changes in balance Upset stomach, vomiting, or diarrhea 	<ul style="list-style-type: none"> Rash, hives, or other signs of an allergic reaction Trouble controlling body or eye movements, twitching, trouble swallowing or speaking
Onfi® Clobazam	<ol style="list-style-type: none"> Used for treatment of Lennox-Gastaut syndrome and other generalized epilepsies. Comes in tablets and liquid. You may crush tablet and give with food, if needed. 	<ul style="list-style-type: none"> Sleepiness Aggression Confusion Difficulty swallowing Cough Constipation 	<ul style="list-style-type: none"> Difficult or slow breathing Stevens-Johnson syndrome Decreased white and red blood cells Swelling of the lips or face
Symmetrel® Amantadine	<ol style="list-style-type: none"> Used mainly for absence seizures. Comes in tablets and liquid. 	<ul style="list-style-type: none"> Dizziness Low blood pressure when standing Dry mouth Mood changes Upset stomach 	<ul style="list-style-type: none"> Blurred vision Bruising Joint swelling Discoloration of skin
Luminal® Phenobarbital	<ol style="list-style-type: none"> Used for generalized and focal seizures primarily in infants and very small child. Comes in tablet and liquid forms. <p><i>It is not recommended to use this medicine when children are trying to learn in a school setting.</i></p> <p><i>Often another medicine is used for the school-aged child.</i></p>	<ul style="list-style-type: none"> Hyperactive behavior often described as fussy, irritable, or stubborn. Most children will get use to this side effect within a month. Always report any rash to your neurologist. Drowsiness. 	<ul style="list-style-type: none"> Difficult or slow breathing Stevens-Johnson syndrome

Brand name Generic name	Medicine used for	Possible side effects	Possible serious effects
Sabril® Vigabatrin	<ol style="list-style-type: none"> Used for intractable complex partial seizures, most commonly infantile spasms associated with tuberous sclerosis. Comes as a tablet and as a liquid. <p><i>*This is a REMS drug. Your child must be enrolled before they can start this medicine.</i></p>	<ul style="list-style-type: none"> Feeling light-headed, sleepy, dizzy, or nervous. Rash Weight gain. Nausea or vomiting 	<ul style="list-style-type: none"> Swelling of the face, throat, or tongue. Call your doctor immediately. Changes in or loss of vision, including peripheral vision. Your doctor will schedule a regular eye exam while on this medicine.
Tegretol® Carbatrol® Carbamazepine	<ol style="list-style-type: none"> Helpful for focal seizures. May be used alone or in a combination with other medicines. Comes in chewable tablet and an orange flavored liquid. Tegretol XR® is an extended release tablet that should not be chewed. Carbatrol® is an extended release sprinkle capsule. 	<ul style="list-style-type: none"> Drowsiness or sleepiness. Nausea, vomiting, and stomach cramps. Rash Increased appetite. 	<ul style="list-style-type: none"> Decreased white blood count, hemoglobin, and platelet may be seen. Liver damage. Low sodium- changes in urination and increased drowsiness. Severe rash Call your doctor immediately. Swelling of the face, throat, or tongue.
Trileptal® Oxcarbazepine Oxtellar XR	<ol style="list-style-type: none"> Mainly used for treatment of focal seizures in patients with epilepsy. Comes in tablets and as a liquid. 	<ul style="list-style-type: none"> Fatigue, headache, dizziness, abnormal walking, tremor. Diplopia (double vision), abnormal vision. Nausea, vomiting. Rash 	<ul style="list-style-type: none"> Severe rash Changes in mental state Low sodium Changes in blood cells

Brand name Generic name	Medicine used for	Possible side effects	Possible serious effects
Topamax® Topiramate Topiramate XR Trokendi XR	<ol style="list-style-type: none"> Used primarily to treat focal and generalized seizures. Comes in tablet and sprinkles. Tablets may have a bitter taste if crushed or chewed. It is important to drink plenty of water each day when taking this medicine, especially during the summer. 	<ul style="list-style-type: none"> Sleepiness, drowsiness, dizziness, incoordination may be felt Some have complained of tingling Watch for difficulty learning, problems in school, or problems with concentrating or memory; and alert your doctor if they become a problem. Decreased appetite that can result in weight loss. Decreased sweating, increased body temperature, and flushing of the face have been reported. Alert your doctor if this occurs. In rare instances can cause glaucoma. Call for any eye redness, tearing, pain or blurred vision. 	Very noticeable changes in mental status.
Tranxene® Clorazepate	<ol style="list-style-type: none"> Used to treat seizures and anxiety. Comes in tablets that you can crush or chew, if needed. 	<ul style="list-style-type: none"> Drowsiness, sleepy, difficulty concentrating Changes in appetite Dry mouth Changes in vision 	<ul style="list-style-type: none"> Difficulty breathing Extreme agitation

Brand name Generic name	Medicine used for	Possible side effects	Possible serious effects
Vimpat® Lacosamide	<ol style="list-style-type: none"> Used with other medicines in treatment of focal seizures for patients with epilepsy. Comes in tablets and as a liquid. 	<ul style="list-style-type: none"> Dizziness, headaches. Diplopia (double vision), abnormal vision. Nausea, vomiting. Rash Behavior changes. 	<ul style="list-style-type: none"> Severe rash Changes in the liver Extreme behavior changes.
Zarontin® Ethosuximide	<ol style="list-style-type: none"> Used mainly for treatment of absence seizures. May be used with other seizure medicines. Comes in a gel cap and raspberry-flavored liquid. 	<ul style="list-style-type: none"> Nervousness, dizziness, headaches, sleepiness, lack of energy, or irritability. These may disappear with time. Stomach pain – may take with meals Rash Nausea, vomiting 	<ul style="list-style-type: none"> Decreased white or red blood cell count Changes in liver function Severe rash Always report rashes to your doctor.
Zonegran® Zonisamide	<ol style="list-style-type: none"> Used with other seizures medicines for treatment of focal and generalized seizures. Comes in capsules. It is important for your child to drink plenty of water each day when taking this medicine, especially during the summer. 	<ul style="list-style-type: none"> Headache, dizziness, difficulties in concentration or memory, mental slowing, fatigue Decreased appetite, kidney stones, weight loss Always report any rash to your neurologist, especially if allergic to sulfa drugs Decreased sweating, flushing of the face and increased body temperature have been reported with this medicine. Alert your child's doctor if this occurs. 	<ul style="list-style-type: none"> Changes in speech or taste. Immediately alert your child's doctor if this occurs. Severe rash Hair loss Changes in breathing Changes in urination- less often or dark urine

Rescue seizure medicines

Prescribed time:

This is the time you give the medicine. For example, your child's doctor may tell you to give a rescue seizure medicine at 5 minutes. If your child is having a seizure and it is now 5 minutes later, you will give the rescue medicine. Most children receive their rescue medicines between 3 to 5 minutes

Brand name	Generic name	Notes
Ativan®	Lorazepam	
Diastat®	Diazepam	
Klonopin®	Clonazepam	
Versed/Nayzilam Nasal Spray®	Midazolam	
Valtoco	Diazepam nasal spray	

NOTE: This is general educational information. It reviews basic medicine information for seizures and epilepsy. This medicine information does not cover all possible uses, actions, precautions, side effects, or interactions of these medicines. Some of these medicines are not FDA approved to be used in children. Some are not FDA approved for certain seizure types. Please call your doctor if you have any questions or concerns about any of these medicines.

Brand name Generic name	Medicine used for	Possible side effects	Possible serious effects
Klonopin® Clonazepam	<ol style="list-style-type: none"> 1. Mainly used for generalized myoclonic, atonic, absence, atypical absence seizures, and focal seizures. 2. Also used for seizure flurries/cluster 3. May use with other seizure medicines. 4. Oral dissolvable tablet 	Rash	<ul style="list-style-type: none"> • Shallow breathing • Pause in breathing
Versed® Midazolam Nayzilam® Midazolam Valtoco® Diazepam	<ol style="list-style-type: none"> 1. Used to stop seizure activity. 2. Follow doctor's instructions for giving this medicine. 3. Nasal spray 	<ul style="list-style-type: none"> • Dizziness • Sleepy • Difficulty concentrating • Dry mouth • Change in balance • Rash 	<ul style="list-style-type: none"> • Shallow breathing • Pause in breathing • Trouble breathing, call 911
Ativan® Lorazepam	<ol style="list-style-type: none"> 1. Mainly for generalized and focal seizures to stop seizure activity lasting longer than the prescribed time or used for "clusters". 2. Your child's doctor will define cluster seizures for you. 3. Comes as a tablet and liquid. 	<ul style="list-style-type: none"> • Drowsiness, confusion, dizziness. • Low blood pressure. • Change in appetite. • Visual disturbances such as seeing stars or odd colors. 	<ul style="list-style-type: none"> • Shallow breathing • Pause in breathing
Diastat® Diazepam	<ol style="list-style-type: none"> 1. Rectal medicine is for both focal and generalized seizures. 2. Give this medicine rectally for a seizure lasting more than the prescribed time or for "cluster" seizures. Your doctor will define cluster seizures for you. 3. Diastat comes in a pack of 2 rectal suppositories. Follow the packet instructions for administration or ask your doctor for details. 	<ul style="list-style-type: none"> • Drowsiness and staggering while walking. • Increased drooling. • Behavior changes such as irritable, restless, inattentive, hyperactive, and sleep disturbances. • Changes in appetite. • Rash. 	<ul style="list-style-type: none"> • Shallow breathing • Pause in breathing

Seizure safety precautions

Until your child's seizures are controlled, the following activities can be dangerous. Call your doctor or nurse before taking part in any of the above activities:

- | | |
|--|--|
| <input type="checkbox"/> Horseback riding | <input type="checkbox"/> Rock or tree climbing |
| <input type="checkbox"/> Water or snow skiing | <input type="checkbox"/> Contact sports |
| <input type="checkbox"/> Football | <input type="checkbox"/> Wrestling |
| <input type="checkbox"/> Rugby | <input type="checkbox"/> Scuba |
| <input type="checkbox"/> Soccer | <input type="checkbox"/> Boxing |
| <input type="checkbox"/> Operating motorized vehicles (go-carts, 4 wheelers, scooters, etc.) | |



Important for all children diagnosed with seizure disorder to follow these safety precautions:

- Have an adult close by when taking a bath.
- Have adult present when swimming in a pool or lake.
- Wear a life jacket when swimming.
- Do not climb trees.
- Only climb to heights that are protected. Wear a safety belt or harness.
- Always wear a bicycle helmet when on a tricycle, bicycle, or rollerblades.



Please note: This list does not cover every possible sport or activity. Parents must always use their best judgment for their child. Safest activities for children with a seizure disorder are the ones that keep both feet on the ground.

Sudden unexpected death in epilepsy (SUDEP)

We use this term when a person with epilepsy suddenly dies and no other cause for the death is found. Each year:

- 1 out of every 1000 adults with epilepsy die from SUDEP.
- 1 out of every 4000 children with epilepsy die from SUDEP.

Seizures in the brain may cause changes in a person's heart rate or breathing.

- SUDEP often happens during sleep.
- SUDEP may happen after a seizure.

Some people with epilepsy, such as the young adult age group, have a higher risk for SUDEP. Other risks include:

- Generalized tonic clonic seizures.
- Having seizures at night or during sleep.
- Taking many seizure medicines.
- Making sudden changes in epilepsy medicines.



The chance of SUDEP increases for uncontrolled seizures or seizures that are caused by brain damage or a brain tumor.

Reducing the risk of SUDEP

The goal is to have as few seizures as possible.

Seizure medicine

- Make sure your child takes their seizure medicines every day.
- Avoid sudden changes in the medicine.
- Do not stop seizure medicine without talking to your child's neurologist.

Keeping your child healthy

It is important for your child to:

- Eat healthy meals.
- Get the recommended amount of sleep for their age.
- Avoid physical activities that leave them feeling tired.

Training friends and family

It is important to train everyone around your child on a regular basis for:

- Safety precautions for seizures
- Seizure first aid training
- CPR (cardiopulmonary resuscitation) training

After a seizure

Stay with child and let the child rest. Breathing should return to normal. Color should return to child's lips and face.

Neurosciences

For information on seizures visit: cookchildrens.org/services/neurosciences/conditions/seizures/



For locations and contacts visit: cookchildrens.org/services/neurosciences/contact-us/



These instructions are only general guidelines. Your healthcare provider may give you special instructions. If you have questions or concerns, please call If your healthcare provider.

Notes:

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins or other markings on the paper.