Conditions

**Symptoms of Epilepsy & Seizures**

*Seizures* can take on many different forms, affecting different children in different ways. Anything the brain does typically can also occur during a seizure, when the brain is being stimulated by the electrical discharges that cause seizures.

While a range of behaviors might occur along with different types of seizures, not all behavioral changes indicate signs of a seizure. Some symptoms of a seizure might be due to other medical problems, or even side effects of medicines.

To figure out whether a symptom might be the result of a seizure, consider these four main characteristics. Seizures are usually:

- **Unpredictable.** In general, you can’t determine when and where a seizure might happen.
- **Episodic.** Seizures can come and go.
- **Brief.** Seizures usually last only seconds to a few minutes.
- **Stereotypic.** Symptoms tend to be similar each time.

Seizures have a beginning, middle and end. Not all parts of a seizure will be visible or easy to separate from one another. And not every child who has seizures will experience all the seizure stages or seizure symptoms described.

**Beginning of a Seizure**

Some children or adults experience feelings, sensations or changes in behavior hours or days before a seizure. This is called prodrome. These feelings are generally not part of the seizure, but might warn a person that a seizure might happen. Not everyone has these signs, but they can help a person change their activity; make sure to take their medicine, or take steps to prevent injury.

A warning (aura) is the first symptom of a seizure, and is considered part of the seizure. Often the aura is an indescribable feeling. Other times it might be a change in feeling, sensation, thought, or behavior that is similar each time a seizure occurs. The aura can occur alone, and might be called a “simple partial seizure” or “partial seizure without change in awareness.” Many kids and adults have no aura or warning. For them, the seizure starts with a loss of consciousness or awareness.

Common symptoms before a seizure include the following.

**Awareness, Sensory, Emotional or Thought Changes**
• Déjà vu (a feeling of being there before but not having been).
• Jamais vu (a feeling that something very familiar is new).
• Smells.
• Sounds.
• Tastes.
• Visual loss or blurring.
• “Strange” feelings.
• Fear/panic (often negative or scary feelings).
• Pleasant feelings.
• Racing thoughts.

Physical Changes
• Dizzy or lightheaded.
• Headache.
• Nausea or other stomach feelings (often a rising feeling from the stomach to the throat).
• Numbness or tingling in part of the body.

Middle of a Seizure
The middle of a seizure is often called the ictal phase. It’s the period of time from the first symptoms (including an aura) to the end of the seizure activity. The ictal phase lines up with the electrical seizure activity in the brain.

Sometimes the visible symptoms last longer than the seizure activity on an electroencephalogram (EEG). That’s because some of the visible symptoms might be aftereffects of a seizure, or not related to seizure activity at all.

Common symptoms during the middle/ictal phase of a seizure include the following.

Awareness, Sensory, Emotional or Thought Changes
• Loss of awareness (“blackout”).
• Confusion, or feeling spacey.
• Periods of forgetfulness or memory lapses.
• Distractedness, periods of daydreaming.
• Loss of consciousness, or “passing out.”
• Inability to hear.
• Sounds that seem strange or different from normal.
• Unusual smells (often bad smells, like burning rubber).
• Unusual tastes in mouth.
• Inability to see.
• Blurry vision.
• Flashing lights.
• Seeing objects or things that aren’t really there.
• Numbness, tingling, or electric shock sensation in body, arm or leg.
• Out-of-body sensations.
• Feeling detached, as though floating.
• Feelings of being somewhere or experiencing something before, without having actually had the experience (déjà vu).
• Feeling that something which is very familiar is new or unfamiliar (jamais vu).
• The sense that body parts feel or look different.
• Panic, fear, or an intense feeling that something bad is about to happen.
• Pleasant feelings.

Physical Changes

• Difficulty talking. (A child might stop talking altogether, make nonsense or garbled sounds, or speech might not make sense.)
• Inability to swallow.
• Drooling.
• Repeated blinking of eyes.
• Eyes that move to one side or look upward.
• Fixed staring.
• Lack of movement or muscle tone, including an inability to move.
• Tremors, twitching or jerking movements.
• Rigid or tense muscles.
• Repeated non-purposeful movements (automatisms) involving the face, arms or legs, such as: lip smacking or chewing movements, wringing or waving hands, dressing or undressing and walking or running.
- Repeated purposeful movements. (The child or adult might continue the activity they were performing before the seizure.)
- Convulsions. (The child or adult loses consciousness, their body becomes rigid or tense, and then fast jerking movements occur.)
- Sudden loss of bladder or bowel control.
- Sweating.
- Change in skin color (looks pale or flushed).
- Dilated or larger-than-normal pupils.
- Biting of tongue (from teeth clenching when muscles tighten).
- Difficulty breathing.
- Heart racing.

**Ending of Seizure**

As the seizure ends, the postictal phase occurs. Some people recover immediately, while others might take minutes to hours to feel like their usual selves. The type of seizure, as well as what part of the brain the seizure impacts, affects the recovery period—how long it might last and what might occur during it.

Common symptoms after a seizure include the following.

**Awareness, Sensory, Emotional or Thought Changes**
- Slowness to respond or inability to respond right away.
- Sleepiness.
- Confusion.
- Memory loss.
- Difficulty talking or writing.
- Feelings of fuzziness, lightheadedness, or dizziness.
- Feelings of depression, sadness, fear, anxiety, frustration, embarrassment, shame or irritation.

**Physical Changes**
- Injuries, such as bruising, cuts, broken bones or head injury (if a fall occurs during the seizure).
- Feelings of tiredness or exhaustion.
- Sleeping for minutes or hours.
- Headache or other pain.
Nausea or upset stomach.

Thirstiness.

General weakness or weakness in one part or side of the body.

Urge to go to the bathroom.

Sudden loss of bladder or bowel control.

**Types of Seizures**

Seizures take many forms. The treatment plan for your child depends on which type of seizures they have.

**Absence Seizure**

An absence seizure causes a short period of “blanking out” or staring into space. Like other kinds of seizures, absence seizures are caused by abnormal activity in a person’s brain.

Some people call absence seizures “petit mal seizures,” although that name is not common anymore.

There are two types of absence seizures:

- **Simple absence seizures:** During a simple absence seizure, a child usually stares into space for less than 10 seconds. Because they happen so quickly, it’s very easy not to notice simple absence seizures. It’s also common to confuse them with daydreaming or not paying attention.

- **Complex absence seizures:** During a complex absence seizure, a child will make some kind of movement in addition to staring into space. Movements might include blinking, chewing or hand gestures. A complex absence seizure can last up to 20 seconds.

**Atypical Absence Seizure**

During an atypical absence seizure, a child will stare (as they would in any absence seizure). However, they might also be somewhat responsive. Eye blinking or slight jerking movements of the lips might occur.

This behavior can be hard to separate from the person’s usual behavior, especially for children who have cognitive impairment. Unlike other absence seizures, atypical absence seizures usually cannot be produced by rapid breathing. They usually last between five and 30 seconds (commonly more than 10), with a gradual beginning and ending.

**Atonic Seizure**
In an atonic seizure, muscles suddenly lose strength. The eyelids might droop, the head might nod, and a child might drop things and fall to the ground. Atonic seizures are also called “drop attacks,” “drop seizures” or “akinetic seizures.”

During an atonic seizure, a child usually remains conscious. The seizure typically lasts less than 15 seconds. Atonic seizures often start in childhood, and last into adulthood. Many people with atonic seizures injure themselves when they fall, so they might choose to use protection such as a helmet.

**Clonic Seizure**

In a clonic seizure, muscles rapidly contract and relax, creating a jerking motion that cannot be stopped by restraining or repositioning the arms or legs. Clonic seizures are rare. Brief and infrequent clonic seizures in infants usually disappear on their own within a short time. Other types might need prolonged treatment.

**Myoclonic Seizure**

Myoclonic seizures are brief, shock-like jerks of a muscle or a group of muscles. They don’t usually last more than a second or two. Sometimes many myoclonic seizures will occur within a short period of time.

**Tonic Seizure**

In a tonic seizure, muscle tone greatly increases, causing the body, arms, or legs to make sudden stiffening movements. A child having a tonic seizure usually stays conscious during the seizure, which typically lasts less than 20 seconds.

Tonic seizures most often occur during sleep and usually involve all or most of the brain, affecting both sides of the body. A child standing up when the seizure starts will often fall.

**Tonic-Clonic Seizure**

Tonic-clonic seizures are what most people think of when they hear the word “seizure.” (An older term for this type is “grand mal seizure.”) Tonic-clonic seizures combine the characteristics of tonic seizures and clonic seizures.

The tonic phase comes first:

1. All the muscles stiffen.
2. Air forced past the vocal cords causes a cry or groan.
3. The child loses consciousness and falls to the floor.
4. The child might bite their tongue or cheek, causing bloody saliva to come from the mouth.
5. The child might turn a bit blue in the face.

After the tonic phase comes the clonic phase:

1. The arms and usually the legs begin to jerk rapidly and rhythmically, bending and relaxing at the elbows, hips and knees.
2. After a few minutes, the jerking slows and stops.
3. The child sometimes loses bladder or bowel control as the body relaxes.
4. Consciousness returns slowly, and the person might feel drowsy, confused, agitated or depressed.

Tonic-clonic seizures generally last one to three minutes. A tonic-clonic seizure that lasts longer than five minutes needs medical help. A seizure lasting more than 10 minutes, or three seizures without a normal period in between, indicates a dangerous condition called convulsive status epilepticus. This requires emergency treatment.

Focal Seizures

Focal seizures are characterized according to one or more of the following features.

**Motor seizures** cause a change in muscle activity. For example, a child might have atypical movements, such as jerking of a finger or stiffening of part of the body. The movements might spread, either staying on one side of the body or extending to both sides. Other examples include weakness, which can even affect speech, and coordinated actions such as laughter or automatic hand movements.

A child experiencing a **sensory seizure or aura** might:

- Smell or taste things that aren’t there (clicking, ringing, or a person’s voice when there is no actual sound).
- Feel a sensation of “pins and needles” or numbness.
- Feel as if they are floating or spinning in space.
- Have visual hallucinations or experience illusions.

**Autonomic seizures** cause changes in the part of the nervous system that automatically controls bodily functions. Symptoms of autonomic seizures might include:

- Strange or unpleasant sensations in the stomach, chest or head.
- Changes in the heart rate or breathing.
- Sweating.
- Goose bumps.
**Dyscognitive seizures** change how kids think, feel or experience things. Sometimes a child’s awareness might be altered.

The child might:

- Have problems with memory, garbled speech, inability to find the right word, or trouble understanding spoken or written language.
- Suddenly feel emotions like fear, depression, or happiness with no outside reason.
- Feel as though they are outside their body.
- Have feelings of déjà vu (“I’ve been here before”) or jamais vu (“This is new to me”—even though the setting is familiar).

Seizures usually start in a focal area of the brain. They quickly involve other areas of the brain that affect alertness and awareness. So even though a child’s eyes are open and they might make movements that seem to have a purpose, in reality they’re unaware of their actions. If the symptoms are subtle, other people might think the person is just daydreaming.

Some kids can have focal seizures without realizing anything has happened. The seizure can wipe out memories of events just before or after it occurs.

Some focal seizures turn into bilateral convulsive seizures. They usually last between 30 seconds and two minutes. Afterward, the child might be tired or confused for several minutes and might not return to normal function for hours.

Bilateral convulsive seizures start in one side of the brain (focal) and spread to both sides of the brain (become generalized) after the initial event has begun, spreading throughout the brain.

Secondarily bilateral convulsive seizures occur in more than 30% of people who have focal epilepsy.

**Febrile Seizures**

Children ages 3 months to 5 or 6 years might have tonic-clonic seizures when they have a high fever. These “febrile seizures” occur in 2 to 5% of all children.

There is a slight tendency for febrile seizures to run in families. If a child’s parents, brothers or sisters, or other close relatives have had febrile seizures, the child is a bit more likely to have them. Sometimes, however, the seizure comes without a family history. A fever might begin in a previously healthy child, with the seizure being the first sign that the child is ill.

**Nonepileptic Seizures or Events**

A nonepileptic seizure is an event that looks like an epileptic seizure, but does not have an epileptic cause.
A common type of nonepileptic seizure is described as psychogenic (beginning in the mind). Psychogenic events are caused by subconscious thoughts, emotions or stress, not by atypical electrical activity in the brain. While doctors consider these seizures psychological in nature, they do not consider them purposely produced. Usually the child believes their seizures to be epileptic in nature.

Some nonepileptic seizures could be caused by other physical problems. Further testing is needed to find the exact cause, so they can be treated properly.

Drug-Resistant Seizures

Sometimes seizures cannot be controlled with seizure medicines. These seizures might be referred to as: “uncontrolled,” “intractable,” “refractory,” or “drug resistant.”

According to the International League Against Epilepsy (ILAE), drug-resistant epilepsy occurs when a person has failed to become and stay seizure-free with adequate trials of two seizure medicines (called AEDs).

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