

# Seizures

Seizures are the most common reason we see pets in veterinary neurology. A seizure is defined as an unusually strong burst of uncontrolled electrical activity in the brain. Seizures themselves are not a disease, but a symptom of another problem.

## Signs

There are two types of seizures. Focal seizures are limited to one region of the brain. During a focal seizure, your pet will typically remain conscious and may only have abnormal movements of a single body part.

Generalized seizures, on the other hand, affect the entire brain. In a classic episode, an animal will lose consciousness, collapse, and the whole body will convulse, often urinating and/or defecating. Most seizures will stop within 30 seconds to a minute, but afterwards, your pet may temporarily appear wobbly, disoriented, or even blind. Episodes are also often precluded by abnormal behavior like confusion, anxiety, or clinginess.

The most common signs of generalized seizures are:

- Stiffening
- Loss of consciousness
- Collapsing
- Muscle twitching
- Jerking body movements
- Paddling motions of limbs
- Vocalizing
- Salivating
- Jaw clenching
- Chomping or tongue chewing
- Foaming at the mouth
- Involuntary defecating or urinating

## Causes

There are three main causes of seizures.

1. Reactive seizures result from a problem outside of the brain that is secondarily affecting the brain. These causes include metabolic disturbances such as low blood sugar, kidney or liver disease, electrolyte abnormalities such as low calcium, and exposure to toxins.
2. Symptomatic seizures result from a problem inside of the brain. These causes include structural abnormalities such as inflammation, brain tumors, strokes, congenital malformations, infections, and head trauma.
3. Idiopathic seizures have no identifiable cause. Idiopathic epilepsy, a condition characterized by recurrent generalized seizures with no identifiable cause, is most likely genetic and the most common reason for seizures in dogs (however, this is not the case for cats).

## Diagnosis

Your neurology care team will want to know when and how frequently your pet's seizures occur, how long the episodes last, and what your pet was doing before, during, and after seizures - videos can be very helpful! This information along with your pet's neurological exam, breed, and age will help determine what kind of tests should be run.

Most diseases outside of the brain are diagnosed from labs (blood, urine, and bile acids) and X-rays (chest and abdomen). These tests not only rule out certain causes, but also clear pets for anesthesia if MRI is deemed necessary. When no obvious cause is found outside of the brain, MRI is typically recommended.

Most diseases inside of the brain are diagnosed with MRI (magnetic resonance imaging) and, sometimes, CSF (cerebrospinal fluid) analysis. MRI is recommended for:

- Dogs younger than 6 months or older than 6 years
- Breeds in which causes inside the brain are more common like Yorkies, Maltese, Chihuahuas, Boxers, and Bulldogs
- A pet with an abnormal neurological examination
- A pet that seems abnormal at home between seizures
- A pet with poor seizure control, despite appropriate medications
- Any cat with seizures

Idiopathic epilepsy is diagnosed by exclusion. Although it can be characterized by a normal neurological exam, normal behavior at home between seizures, and the first seizure occurring between six months and six years of age, the only way to definitively diagnose it is to rule out all other possible causes.

## Treatment

Appropriate treatment of seizures depends on accurately diagnosing the underlying cause. If a cause is discovered, it is imperative to address it concurrently. However, regardless of the cause, we don't expect to stop all seizures completely. The goal of treatment is to decrease frequency, severity, and duration. Anti-seizure medications are used to accomplish this.

Seizure management requires finding a balance between seizure activity and medication side effects. This balance is unique for every pet, so some trial and error is involved.

Therefore, it is important to keep a detailed log of all seizures, including the frequency, severity, and duration, as well as any medication side effects.

Regular blood work to check kidneys, liver values, and drug levels is indicated for pets on anti-seizure medication.

## Prognosis

Prognosis depends on the underlying cause.

Despite the frightening display, seizures are not painful, and epileptic pets can live long, happy lives with your commitment. Aside from administering medication, you may feel somewhat powerless, but knowing what to do and what not to do during a seizure can help.

1. **DO NOT** restrain your pet during episodes, and keep your hands away from its mouth. Touch will not provide relief, and there is a chance you will be accidentally bitten.
2. **DO** make sure your pet can't hurt itself on anything in the area or fall off furniture, down stairs, or in water.
3. **DO** take note of the severity and duration. Record a video of the episode if possible.

## When to contact your vet

You do not need to call every time your dog has an episode. The following situations are emergencies that warrant calling your veterinarian or an emergency clinic immediately:

- The first time your pet has had a seizure
- A seizure lasting longer than 3 minutes
- More than 2 seizures in a 24-hour period
- One seizure after another in which the pet does not return to normal in between
- Your pet begins having seizures more often than usual.

## Frequently Asked Questions

### ***What if I forgot to give a medication dose?***

This depends on your pet's medication, neurologist, and other factors. Please call us right away to discuss the best course of action for your pet.

### ***What if my pet vomits after taking medication?***

This depends on your pet's medication, neurologist, and other factors. Please call us right away to discuss the best course of action for your pet.

### ***Can the times I give my pet medication vary?***

Giving medication at the same time every day is important. An hour early or late should be fine, but try to keep it as regular as possible, as certain medications are sensitive to this.

### ***Can I give my pet parasite preventative (flea, tick, heartworm, etc.)?***

Yes, please! However, please be sure to consult your neurologist about which preventatives are recommended for patients with seizures.

### ***Can my pet get vaccinated?***

Yes, please! Unless your dog has meningitis or is on steroid treatment.

### ***Can I spay my female dog?***

Yes, please! Hormonal changes are associated with increased seizure frequency. If your dog is an intact female, consider spaying her, and the frequency of her seizures will likely reduce.



Learn more about  
seizures:

