



EPILEPSY

Epilepsy

The neurology department at Southfields has a particular research interest in canine epilepsy. We offer a tailored service called epilepsy clinic designed to help you and your pet to find the best lifestyle for the family. Please do not hesitate to contact us for further information about how we can help you and your dog to live with epilepsy whether it's with traditional medication or alternative therapies

Epilepsy: what is it?

- + **Seizure:** A seizure is the appearance of signs and symptoms caused by abnormal, excessive, or synchronous neuronal activity of the brain.
- + **Epilepsy:** Epilepsy is a lasting condition of the brain that leads to recurring seizures. There are many causes of recurrent seizures; therefore, epilepsy is not a specific disease but rather a group of disorders.

The phases of the seizure: what happens?

- + **Prodrome:** The prodrome is the change in behavior that your dog might experience before having a seizure. There is no abnormal activity in the brain during this time, so you don't need to worry about it. A prodrome is not observed in every dog, but it might include restlessness, vocalizing, clinginess, or hiding. The changes in behavior could happen hours to days before the seizure. Recognizing these changes could be very useful in identifying when your dog might have a seizure, and tracking them could help your veterinarian with the medication they recommend. Keep looking for it!

- + **Aura:** The aura in veterinary neurology is defined as a focal seizure that might or might not precede a generalized seizure. There is abnormal brain activity during this phase; therefore, the EEG (electroencephalography that measures the activity in the brain) will be abnormal. You should note these events down as them being a seizure and let your veterinarian know about it.
- + **Ictus:** The ictus is the seizure itself. Depending on what type of seizure your dog has, the symptoms will vary from paddling, urinating/defecating, stiffness, ear and muzzle twitching, and/or body shake. The ictus itself will probably not last more than one minute. If it lasts more than five minutes you should seek emergency veterinary care.
- + **Post-ictus:** The post-ictal phase is the recovery period after the seizure. Your dog might experience confusion, weakness/ataxia, temporary loss of vision and/or increased thirst. The post-ictal phase could last from a few minutes to a few days.
- + **Inter-ictal:** The inter-ictal phase is the time after the post-ictus and the prodrome, aura or ictus. It's when your dog "should" be normal.

Types of seizures: what will I see?

- + **Single:** There is only one seizure in 24 hours. The seizure could be generalized or focal.
- + **Clusters:** There is more than one seizure in 24 hours. The seizure could be generalized or focal. This is a more severe presentation and you should call your veterinarian. We often recommend that dogs with cluster seizures start antiepileptic treatment.
- + **Status epilepticus:** There are continuous seizures. THIS IS AN EMERGENCY. Status epilepticus can be defined clinically as:
 1. Greater than five minutes of continuous epileptic seizures or
 2. Two or more discrete epileptic seizures between which there is incomplete recovery of consciousness.

YOU SHOULD SEEK IMMEDIATE VETERINARY HELP. THIS IS AN EMERGENCY.

- + **Generalized seizures:** There is an abnormal electrical disturbance affecting both brain hemispheres: the whole brain is affected. In dogs, the seizure presents predominantly as immediate 'convulsions' and loss of consciousness. Salivation, urination and/or defecation (we call these autonomic signs) often also occurs during convulsions. Your dog might fall on his/her side, start shaking, paddling, and/or vigorously moving their limbs.
- + **Focal:** Focal epileptic seizures are characterized by lateralized and/or regional signs (motor, autonomic or behavioral signs, alone or in combination). It will vary depending on the part of the brain that is affected. "Fly catching" and "ear twitching" can be some of the signs.

Types of epilepsy: what are the causes?

Now we need to give your dog's epilepsy a "family" name. What type of epilepsy does he/she have?

- + **Genetic or Idiopathic or Primary Epilepsy:** Your dog's brain has no structural problem. It's physically normal, but the balance between the neurotransmitters in the brain is not well-adjusted. With idiopathic epilepsy, there is a confirmed genetic or familial basis. Be aware that the diagnosis of idiopathic epilepsy in dogs is a rule out diagnosis and it's not based on the results of one test but rather a combination:
 - The age at onset (between six months and six years)
 - Normal inter-ictal neurological examination
 - Normal blood work
 - Normal MRI (magnetic resonance imaging) and CSF (cerebro-spinal fluid) of the brain
 - One year follow up with no neurological progression other than the seizures

Your dog will need to have all these characteristics to fit the diagnosis of "idiopathic epilepsy".

Metabolic or Reactive Seizures: Reactive seizures are the reaction of a normal brain to a systemic metabolic or nutritional disorder or exogenous toxin exposure. A very common example of reactive seizures is congenital hepatic shunt, typically seen in puppies. In these cases, typically blood work will show abnormalities.

Structural or Secondary Epilepsy: These are caused by a known and identifiable structural brain disorder such as stroke, an inflammatory/infectious disease (meningitis), a traumatic brain injury, a congenital or developmental abnormality, or a brain tumor or storage disease in the brain. In these cases, the MRI of the brain and/or CSF analysis will typically be abnormal.

Epilepsy of Unknown Etiology or Cryptogenic: This term refers to a brain disease that is strongly suspected but cannot be identified despite extensive investigations.

Prognosis: and now what?

Will epilepsy shorten my dog's life? Idiopathic epilepsy should not really shorten your dog's life. If your dog has seizures because he has an underlying disease (please see "types of epilepsy" section) then his/her life might be shortened if the primary cause is not treated.

What will be my dog's quality of life? Your dog should have a GOOD quality of life, that is a must! It's true that antiepileptic treatments have side effects, but you should work with your veterinary neurologist to find the best combination to achieve a good quality of life.

Will my dog stop having seizures? It is very unlikely. The goal of the treatment is to reduce the intensity and the frequency of the seizures as much as possible without affecting your dog's quality of life. A 50% reduction of the intensity or frequency of the seizures is considered a successful outcome in veterinary neurology.

Dogs don't drive or use dangerous machinery.

Moreover, they won't likely hurt themselves by falling from a standing position like humans. In veterinary neurology, we take that in consideration as we look at the side effects of medication and the fact that pet owners will need to administer this medication to their dogs (which can be a significant time commitment).

What happens if I do nothing? The course of idiopathic epilepsy is highly individual and might not necessarily require long-term treatment. However, if your dog's epilepsy is presented as clusters or the frequency or intensity of the seizures is increasing, treatment is highly recommended. If your dog's epilepsy continues to get worse and you do nothing about it, your dog might die during a status epilepticus episode.

Common questions about dogs with epilepsy

- + **I forgot to give a dose:** If you remember before the next dose, then you can give it. If you completely forgot, don't give a double dose the next time. Write it down to tell your veterinarian at the next visit. This might affect blood results or your dog's seizure frequency.
- + **My dog vomited:** Don't give an extra dose; give the normal dose next time. Write it down to tell your veterinarian at the next visit. This might affect blood results or your dog's seizure frequency.
- + **I found a tablet on his bed/floor:** Don't give an extra dose. You will give the normal dose next time. Write it down to tell your veterinarian at the next visit. This might affect blood results or your dog's seizure frequency. Ask your veterinarian how to make sure your dog takes the tablets.
- + **Can I give medications at different times of the day?** Giving the medication regularly at the same time every day is very important. It's a big commitment and "My dog's epilepsy" understands this. Using our diary will help you make sure your dog has their medication regularly every day. If you're an hour early or late, it should be fine, but try to keep it as regular as possible. Certain medications are extremely sensitive to time changes.
- + **Can I use flea and tick medication?** Yes, and you should administer as you did previously.
- + **Can my dog still have his/her vaccines?** Yes, and you should continue to schedule as you did previously. The only exception would be if your dog has meningitis and/or is on steroid treatment.
- + **Can I take my dog to the groomer?** Yes, if your dog enjoys it. Remember that certain dogs might have a precipitating factor for their seizures. If you don't think that the groomer creates unnecessary stress for your dog, then enjoy it as much as you can!
- + **Should I consider spaying my dog?** Hormonal changes have been related to increased seizure frequency. If your dog is an entire female, you could consider spaying her. It's likely that the frequency of her seizures will be lower after.
- + **Can stressful situations like fireworks, changing routines, visitors, etc., cause seizures?** Dogs tend to have seizures while sleeping not while being excited and active. The majority of seizures appear to occur spontaneously, however sometimes seizures may be precipitated by a variety of environmental and internal factors. A recent study demonstrated that some dogs

might have seizure-precipitating factors. The most frequently reported seizure-precipitating factors in this study were having visitors at home, a change in the life situation, a change in the daily routine, altered sleep patterns, unfamiliar places, weather, as well as hormonal factors. In the study, dogs with focal seizures were observed to have more precipitating factors than dogs with generalized seizures. The true prevalence of these phenomena is still unclear and requires more research. It is very possible your dog might NOT have a precipitating factor, but if you think he/she has one, trying to avoid it is a good idea.

When a seizure strikes

Keep calm! Unfortunately, there's nothing you can do for your dog (apart from medication) that will stop the seizures, but you want to make sure he/she won't hurt him/herself. Keep them away from stairs or furniture to avoid falls or head injuries.

It might make you feel better to talk to them and stroke them while the seizure is happening, but don't feel pressured to do it or feel bad if you can't. Your dog will love you the same after the seizure with or without cuddles! and they likely won't remember anyway.

If your dog has been prescribed diazepam or midazolam, you could try to give it to them. In many situations, by the time you get the medication ready the seizure has finished. You don't have to give the medication if the seizure has already finished.

Once the seizure has finished your dog might be confused and wobbly. Make sure he/she won't hurt him/herself.

A very small number of dogs might become aggressive after a seizure. If this is the case for your dog, this will probably happen after every seizure. If this has not happened to your dog already, it's extremely unlikely that it will happen in the future. If your dog is aggressive after his/her seizures: STAY AWAY! Make sure they are in a safe room/area and give them space until they are fully recovered.

When should I call a veterinarian? If the seizure lasts more than five minutes or your dog has seizures so close together that he/she can't fully recover, then this is an EMERGENCY and you should seek IMMEDIATE care at an emergency veterinary facility. You should call your veterinarian if the intensity or frequency of the seizures is increasing or if you feel your dog has not fully recovered from the seizure.

What NOT to do: Don't put your hands inside your dog's mouth! Your dog won't swallow his/her tongue or bite it, leave his/her mouth alone. It's easier to say than to do, but DON'T PANIC. He/she won't swallow his/her tongue or stop breathing.

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