

EPILEPSY AND YOUR DOG

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What is epilepsy?

Epilepsy is an electrical disturbance of the brain characterized by a brief upset of mental and body functions referred to as seizures. Nerve cells of the brain normally emit electrical impulses. These electrical impulses flow harmoniously together through the brain and keep the mind and body functioning properly. If brain nerve cells are injured or upset, they may occasionally emit excessive abnormal electrical impulses like an electrical "brainstorm". When this generalized electrical disturbance occurs, a seizure results.

What causes epilepsy?

Anything that can injure or upset the nerve cells of the brain can cause a seizure. Epilepsy may develop from mild residual nerve cell injury following head trauma or encephalitis. The first seizures may occur several months to a year after this injury. The delay in onset of the seizures often makes it difficult to determine what originally injured the nerve cells, but there is no active underlying disease process occurring in the brain and the condition is not inherited. This seems to be the most common type of epilepsy in dogs

In certain pure breeds of dogs especially Poodles, German Shepherds, Irish Setters and Beagles as well as others, a hereditary type of epilepsy occurs. In this type of epilepsy, the cells do not develop properly and are capable of periodically emitting these abnormal electrical impulses and producing seizures.

Seizures may also be caused by toxicities, encephalitis, low blood sugar, liver problems and brain tumors, so a veterinarian should evaluate dogs with seizures to determine what the proper treatment should be.

What happens during an epileptic seizure and what types of seizures do dogs have?

During a seizure the normal electrical impulses of the brain are disturbed and the dog may lose control of its body and become confused or unconscious for a short period of time. Only rarely do they become vicious during this period. Your dog is more likely to be frightened, if it is conscious.

In a mild generalized seizure, the dog may not lose consciousness, but will shake and lose control of the legs symmetrically on both sides of the body. They may be frightened and try to crawl to their owner or may hide. Some dogs salivate and/or vomit with this type of

seizure. Although this seizure is mild, it can last 20 minutes or more. If the seizure continues beyond 20 minutes, a veterinarian may have to stop the seizure.

In a more severe generalized seizure, the dog falls upon its side unconscious with its eyes open. The legs may be very stiff, shake, or paddle but are symmetrically affected. The jaws may make chewing motions, be open or closed. The dog may also salivate, urinate and/or defecate during this type of seizure. The seizure usually lasts only 1-3 minutes, and then the recovery period begins. Dogs don't remember the seizure itself and are not in pain. If there are many seizures in a row or a long seizure over 5-minutes, this is an emergency and veterinarian may be needed to stop the seizure.

In a focal seizure, the dog is often conscious, but may momentarily lose control of one part of their body or may stare off in space at imaginary objects. The appearance of these focal seizures varies depending on the area of the brain involved. The seizures can be mild, but can then develop into a more severe form where they are on their side unconscious salivating, twitching and paddling but often one side of the face or body is more affected than the other.

What can be done for your dog during a seizure?

Once a typical complete generalized seizure has begun, there is usually nothing you can do to stop it without rectal drugs previously obtained from your veterinarian. If multiple seizures occur and involve repeated trips to the emergency service your veterinarian can prescribe diazepam (Valium) impregnated suppositories compounded to the correct dosage for your dog. The suppository is inserted through the anus into the rectum. The anus is the first opening just underneath the tail.

During the seizure your dog should be held or otherwise protected from falling off the bed or down the stairs or injuring itself in any way during the seizure. Dogs do not swallow their tongue during the seizure. The uncontrollable chewing movements of the jaws may accidentally pinch your fingers if you put your hands into their mouth. If an object is placed in your pet's mouth, breathing may be obstructed and suffocation may occur. If your pet consistently bites and injures its tongue during the seizure, an object can be carefully placed between the back teeth on one side, but care must be taken not to obstruct breathing. Dogs may be held and gently stroked or put in a padded environment during the seizure, but should not be tied up. In a mild seizure, pet owners report they can calm their dog by stroking or holding them and stop or shorten the seizure.

What should be done for your dog during the recovery period after a seizure?

After the seizure, your dog often goes through a recovery period. The appearance and length of this period will vary from animal to animal. Some dogs want to urinate or defecate, if they did not do so during the seizure. Some are thirsty and hungry and others are exhausted and want to sleep. Your dog should be allowed to urinate, defecate, eat, drink and rest; then they usually return to normal.

Some dogs are very hyperactive during the recovery period. They may constantly pace and bump into objects. If the hyperactivity is severe, your dog may require sedation by drugs to keep them from injuring themselves during the recovery period. Diazepam (Valium) suppositories may reduce the hyperactivity following the seizure. The recovery period length varies from a few minutes to several hours with different dogs and seizure types.

The seizure and recovery period are frightening for some people. However, dogs rarely die in a brief seizure and usually have no memory of it. Multiple seizures close together or long seizures can cause brain damage and emergency veterinary assistance should be obtained to stop the seizure. Most dog owners adjust to the possibility of an occasional seizure and can properly care for their pet during and after the seizure.

Can epilepsy be cured?

Epilepsy is rarely cured but the seizures in most pets can be controlled with treatment. Treatment keeps the abnormal electrical impulses of nerve cells to a minimum, so that surrounding nerve cells will not be disturbed and the seizure cannot occur. If seizures are mild and infrequent like a few times a year, often no treatment is given. Mild seizures may be treated with herbal therapy, acupuncture or homeopathy administered by a veterinarian specially trained in these modalities. Acupuncture may be helpful alone or combined with more traditional drug therapy in dogs with more frequent or severe seizures.

When seizures occur once a month or in clusters (multiple seizures in a row over a short time) drug therapy is often prescribed. Every dog reacts differently to the drugs needed to control seizures and dosages have to be regulated for each individual. It may take a larger dosage of medication to control seizures in a small dog than in a large dog. It takes patience and working closely with your veterinarian to find the right drug and the right dosage to control your dog's seizures with minimum side effects. Usually the seizures can be kept to a minimum and the dog can be normal in between them.

Owners of epileptic dogs often find it helpful to keep a calendar and record dosage and time of daily medication and the occurrence of any side effects and seizures. The veterinarian can review the calendar and try different medication regimens to determine what best controls the seizures without sedation or other side effects.

Phenobarbital and potassium bromide (KBr) are the most common drugs used to control seizures in dogs. The dog metabolizes diphenylhydantoin (Dilantin) differently than humans and this drug is less effective in dogs than humans. Phenobarbital and KBr are quite inexpensive and usually can be given every 12 hours to control seizures. Phenobarbital may be used first if seizures occur multiple times a week but KBr may be used first if seizures are less frequent.

The other anticonvulsants used in man may be tried when all else fails but they have more side effects and are expensive. The veterinarian will usually begin with a single

anticonvulsant and adjust the dose until the seizures are controlled and there are no side effects of sedation. If there are side effects or the seizures are not controlled, a serum phenobarbital level is obtained. In dogs with seizures that are difficult to control, the oral dosage should be increased until the serum level is 30 micrograms per milliliter. If serum phenobarbital levels occur above that level, then liver damage may occur.

The most common side effects of the phenobarbital and KBr are sedation and rear limb weakness. If the side effects do not pass in 24-48 hours, the dose should be decreased with a veterinarian's guidance. A few dogs may have bizarre behavior or be hyperactive on phenobarbital. This is not a permanent change and will go away as the medication wears off. For these dogs, mephobarbital may be a better drug choice. Increased appetite, thirst and urinations may be a side effect of phenobarbital and KBr. If these signs are severe, the drug should be decreased or changed as the dog may gain excessive weight.

KBr takes 3-4 weeks to be effective but may have less sedative side effects than phenobarbital. KBr must be given with food as your dog may be nauseated and vomit if it is given on an empty stomach. KBr is toxic to human and so gloves should be worn during administration and all contact avoided. After 3-4 months serum KBr levels can be evaluated; seizure control is achieved at levels between 2-4mg/ml. In dogs with cluster seizures (multiple seizures at one time) the dosage may have to be increased until the serum level is 4 mg/ml. If seizures are not controlled with medication, adding acupuncture may control seizures.

How long should medication be continued?

Once medication is begun, it usually is given indefinitely and often for life. The dosage may have to be changed periodically to keep the seizures controlled. Drug tolerance to phenobarbital is common and the dosages may have to be increased the longer the animal is on the medication. Seizures may be well controlled for a period of time and then the dog may have multiple seizures, which do not respond to medication as well as before. Dogs may go through this periodically and with dosage adjustments the seizures can still be controlled again satisfactorily. Many dogs that have cluster seizures respond well to KBr at higher doses. If there are no seizures for a year, the dosage may be decreased by your veterinarian. Epilepsy rarely spontaneously disappears so some level of medication is often needed for life. Medication may be reduced every 6 months if the dog remains seizure free, but a veterinarian can provide assistance with dosage reduction. Never completely withdraw a drug all at once, as this may send your dog into multiple seizures.

Is there any special care for my epileptic dog?

The epileptic dog needs medication every day at a regular time, usually every 12 hours, but in some cases every 8 hours. The rest of the care is the same as for any other animal and consists of a good balanced diet, exercise and regular check-ups by a veterinarian. A complete blood count and serum chemistry profile and bile acids examination should be obtained every 6-12 months to ensure no liver problems are occurring. The primary aim of seizure control is for the animal to lead a normal healthy happy life and most of them

do. For some dogs, over-excitement such as grooming or visits from company exacerbates seizures. A little extra medication given prior to the excitement may stop these seizures and a veterinarian will determine the best dosage. Other dogs have seizures during sleep and are not affected by excitement. Some dogs develop a pattern of seizures that occur every few weeks like clockwork. Any patterns can be detected by studying a completed calendar. Increasing drug dosages during high-risk periods may prevent seizures.

If an epileptic dog becomes sick for any reason, expect that the seizures may become more frequent, especially if the animal has vomiting and diarrhea and does not get the needed amount of medication into its system. If the body chemistry changes due to any disease process particularly liver and kidney disease or thyroid problems, the dosage of medication may have to be changed. Once the disease process is corrected, the seizures become controlled again. Some female dogs have more seizures during their heat period. If this is the case, spaying the dog can correct this. If an epileptic dog needs a tranquilizer for travel do not use phenothiazine derivative tranquilizers (acepromazine) as these drugs may precipitate seizures. Often just increasing the anticonvulsant dose (particularly phenobarbital) will calm them for travel. Diazepam (Valium) may also be used, but consult a veterinarian about the effects of combining this with any current medication. Dogs on KBr should not have their diet changed as changes in salt intake can affect serum KBr levels.

If an epileptic dog has seizures that are difficult to control, we also recommend using a daily heartworm medication such as filaribits or using once a month interceptor. Some flea control products may worsen seizures so check with your veterinarian.

Will epilepsy become worse with age or shorten my dog's life?

Epilepsy rarely becomes worse with age and some dogs that develop seizures at a very young age may even improve and be able to discontinue medication, as they grow older. Epilepsy with seizure control does not shorten your pet's life. If the seizures are not controllable with anticonvulsants and acupuncture, the dog should be re-evaluated for some serious brain disease or generalized illness in the body. If your dog only has a few seizures a year, this is considered quite well controlled and they should have a healthy long life.