**CANINE SEIZURES & EPILEPSY**

The term seizure refers to a disturbance of the nervous system which results in repeated involuntary muscle contractions. Seizures can vary in their severity from mild (petite mal) in which the dog has a series of mild muscle twitches, to a severe seizure (grand mal) in which the dog becomes unconscious, unable to stand and exhibits violent contractions of major muscle groups. The most common type seen in dogs is the grand mal seizure.

A grand mal seizure consists of four stages; aura, prodrome, ictus and post-ictus. The *aura* is the time prior to the onset of the seizure. The dog may exhibit restlessness, anxiety, blank expressions, or other abnormal behaviors. The *prodrome* stage begins when the animal becomes still and loses consciousness. During *ictus*, there is a sudden contraction of all muscle groups and the animal often falls over. During this phase of the seizure the dog may go through motions which resemble pedaling or running. Other activities commonly seen during a seizure include urination, defecation, excessive drooling and dilatation of the pupils. The entire seizure can last from a few seconds to a several minutes. The *post-ictal* phase begins as the dog regains consciousness. The dog may exhibit blindness, restlessness, confusion, depression, fatigue, or lack of coordination. This phase may last from a few seconds to a few days. The seizure is not painful to the animal and the "thinking" ability of the animal is not impaired following recovery from the seizure. It is not uncommon for seizures to occur in clusters of two or three episodes during a short period of time. As a rule, any grand mal seizure which lasts longer than five minutes or a cluster of more than 3 seizures should be reported immediately to your veterinarian. Brief seizures are rarely life-threatening but continuous seizure activity, often called status epilepticus, can be a medical emergency.

**CAUSES**

Liver and kidney disease, electrolyte imbalance, hypoglycemia (low blood sugar), tumors, trauma, infectious disease and epilepsy are possible causes of seizures in dogs. To diagnose the cause of your dog's seizures it is important to record a thorough history of the seizure activity and perform a comprehensive physical exam which may include blood tests, urinalysis, and radiographs.

Epilepsy is the most common cause of seizures in dogs. This disorder is characteristic of recurrent seizure activity without finding any identifiable cause. Epilepsy is best thought of as a functional abnormality in brain activity which causes the seizures.

The first seizure associated with epilepsy usually occurs when the dog is between one and four years of age. Epilepsy is most commonly an inherited disease. Poodles, German Shepherds, Irish Setters, Labrador Retrievers and Golden Retrievers are the breeds most often affected. Large breed dogs commonly have clusters of seizures at regular intervals. Smaller breed dogs tend to have more erratic seizure patterns.
TREATMENT

The goal of seizure therapy is to reduce the frequency, number and severity of the seizures. A well controlled epileptic may still have an occasional mild seizure. Several types of drugs are available for seizure control. All are anticonvulsants and include phenobarbital, potassium bromide and levetiracetam (Keppra). These drugs are prescribed after a clear pattern of seizure activity has been established and generally need to be given throughout the dog’s life. Some of these drugs may cause potential side-effects. Increased appetite, thirst and urination, personality changes and sedation are commonly seen. Tolerance to the sedative effects usually develops after 1-2 weeks of therapy. Many anticonvulsants also have the potential to change the function of the liver or cause liver damage. Blood tests to determine both the levels of the drug prescribed and liver enzyme levels must be checked on a regular basis. A careful documented diary detailing the length, time and severity of any seizure activity once treatment has begun is also very important.

SUMMARY

** Seizures may vary from mild to severe.
** Brief seizures (less than 5 minutes) are rarely life-threatening or painful.
** Epilepsy is the most common cause of seizures in dogs.
** Treatment, if necessary, involves oral anticonvulsants to eliminate or reduce the frequency, length and severity of each seizure.
** Periodic monitoring of drug levels and liver enzymes is important to insure your pet's long term health.
** Accurate documentation of all seizure activity before and after treatment is very important in maintaining control of this condition.

Epilepsy is a common condition in dogs. It can be well controlled in most dogs allowing them to live a virtually normal and healthy life. We want to work with you and your dog to make this possible. Please feel free to call if you have any questions or concerns.