

MONITORING DRUG TREATMENT

In order for any drug therapy to be effective, the amount of drug found in the body (*serum concentration*) must be consistently monitored. No two animals may react to the same dose in the same way. The amount of drug found in the body correlates much better with seizure control than daily dosage. If your dog is on medication, work with your veterinarian in observing your dog and testing his/her serum levels to ensure he/she is receiving the appropriate amount of drug to achieve control and avoid side effects. This is especially important if there is poor seizure control.

ALTERNATIVE TREATMENTS

Some dogs respond well to alternative treatments. These treatments should be under the advisement of a practicing veterinarian. Treatments that have been successful in some cases include:

- * Acupuncture, Gold Bead Implants
- * Massage/ Acupressure
- * Vitamins, Supplements
- * Herbs
- * Natural Diet
- * Aromatherapy
- * Flower Essences

Advice and suggestions found in this pamphlet are not meant to replace professional veterinary care.

Please consult your veterinarian Before changing your dog's medications or diet.

PARTING THOUGHTS

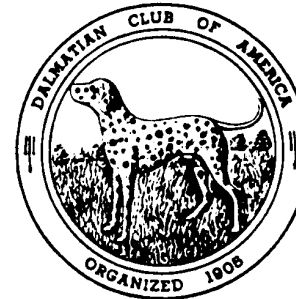
Epilepsy is not a death sentence. If your dog experiences seizures, there is help. It is important that you work with a veterinarian professional with whom you feel comfortable and follow their instructions. Before changing medications or dosages, consult with your vet. Monitor serum and liver function levels and above all, have patience! It may take time for any medication to reach optimum effect. Research into epilepsy is current and ongoing and it is important to participate fully in any research project devoted to this disorder that your breed club has sponsored. The Dalmatian Club of America is currently enrolled in two DNA studies to locate the gene(s) for epilepsy. We urge all Dalmatian owners that have a dog with a seizure disorder to explore and participate in one or both of these studies. The contact information is listed in the boxes below.

VetGen, LLC
Cheryl Hogue, Research Coordinator
Ann Arbor, MI 48108 USA
Phone: (800) 483-8436 (US only) or
(734) 669-8440; Fax: (734) 669-8441
Email: VetGen@Healthydog.com

Liz Hansen, Coord. Vet. Information
Dr. Gary Johnson's Lab
Dept. of Vet. Pathology
University of Missouri
College of Veterinary Medicine
209A Connaway Hall
Columbia, MO 652-11
Phone: (573) 884-3712
Fax: (573) 884-5414
Email: hansenl@missouri.edu

For more information consult with your veterinarian and visit the all breed web site for canine seizure disorders at <http://www.canine-epilepsy.com>

An on-line copy of this pamphlet will be made available to download at the official Dalmatian Club of America website: www.thedca.org



CANINE SEIZURES

Prepared by the
**Dalmatian Club of America
Study Group on Epilepsy
and Seizure Disorders**

Marion Mitchell
Elizabeth (Tibbie) Dell
Jennifer Johnson-Glaser



Funded by the
Dalmatian Club of America Foundation, Inc.

WHAT IS A SEIZURE?

Seizures are the result of muscle responses to an abnormal nerve-signal burst from the brain. They are a symptom of an underlying neurological dysfunction. Toxic substances, metabolic or electrolyte abnormalities and/or imbalances cause an uncoordinated firing of neurons in the cerebrum of the brain, creating seizures from mild, “petit mal” to severe, “grand mal”.

FOUR SEIZURE STAGES

The four stages to a seizure consist of the **Prodrome**, **Aura**, **Ictus**, and **Post Ictus/Ictal**. Some dogs will show signs of restlessness during the first two stages, while others do not. The **Ictus** is the actual seizure/convulsion and could last 45 seconds to 3 minutes. Loss of consciousness, thrashing of limbs & teeth, as well as uncontrollable muscle movement & loss of bodily functions are common. **The Post Ictus** (after seizure) behavior may consist of disorientation, wandering, blindness, excessive hunger, and thirst. It can last minutes to days.

THE CAUSE:

Anything that disrupts normal brain circuitry: **Idiopathic Epilepsy**: Meaning no known cause and possibly inherited. This is also referred to as **Primary Epilepsy**. Check history of pedigree and make sure your veterinarian has looked for possible underlying factors.

Seizures caused by underlying factors are referred to as **Secondary Epilepsy**. The following tests are advised before a diagnosis of idiopathic/primary epilepsy is made.

- 1) **CBC, Chem screen and bile acids**
- 2) **Glucose . . .**
- 3) **Thyroid Panel**
- 4) **EEG . . .**
- 5) **Blood test for lead poisoning . . .**
- 6) **Cerebrospinal fluid analysis . . .**
- 7) **CT scan/MRI . . .**

TYPES OF SEIZURES

If you believe your dog is having a seizure, it is important to note all the details in a journal so that you may accurately describe it to your veterinarian.

- **Generalized Seizure:** Tonic-clonic (*may be Grand Mal or Mild*): In the grand mal seizure, the tonic phase occurs as the animal falls, loses consciousness, and extends its limbs rigidly. Respiration may stop (*apnea*). This phase usually lasts 10-30 seconds before the clonic phase begins. Clonic movements include paddling of the limbs and/or chewing. Other signs that may appear during the tonic or clonic phase are dilation of the pupils, salivation, urination, and defecation.

- **Petit Mal Seizure** (*A.K.A. Absence seizure*): Signs are brief (seconds) duration of unconsciousness, loss of muscle tone, blank stare, and possibly upward rotation of eyes.

- **Partial Seizures:** Movements are restricted to one area of the body, such as muscle jerking, movement of one limb, turning the head or bending the trunk to one side, or facial twitches. A partial seizure can progress to (and be mistaken for) a generalized tonic-clonic seizure, but the difference can be established by noting whether or not a seizure starts with one specific area of the body.

- **Complex Partial Seizures** (*A.K.A. Psychomotor or Behavioral*): Seizures are associated with bizarre or complex behaviors that are repeated during each seizure. Dogs may exhibit lip smacking, chewing, fly biting, aggression, vocalization, hysterical running, cowering or hiding in otherwise normal animals. There is an obvious lack of awareness though usually not loss of consciousness. Abnormal behaviors may last minutes or hours and can be followed by a generalized seizure.

- **Cluster Seizures:** Multiple seizures within a 24-hour period with only brief periods of consciousness in between. May be confused with status epilepticus.

- **Status Epilepticus:** Status can occur as one continuous seizure lasting 30 minutes or more, or a series of multiple seizures in a short time with no periods of normal consciousness. It can be difficult to tell status epilepticus from frequent cluster seizures; but both are considered life-threatening emergencies. **Contact your Vet!**

Most status patients usually suffer from generalized tonic-clonic seizures.

DURING A SEIZURE:

- Some dogs are light or sound sensitive during seizure episodes. Try dimming the lights and keeping loud noise at a distance from the dog.
- Calling the dog’s name to bring them out of the seizure may sometimes work, but most seizures will run their course.
- A fan blowing on the dog, or rubbing the feet and belly with cool (not cold) water may help cool the dog down. **Should the dog seem to be overheating due to repeated seizures or not coming out of a seizure - IMMEDIATELY bring the dog to/or contact a vet since overheating can be very dangerous.**
- Many dogs are confused and even blind right after a seizure. Keep the dog in a safe area where they cannot fall down stairs, get tangled in cords, break glass, fall into a pool, or hurt themselves. Keep your hands away from the dog’s mouth! Other dogs in the household may attack a seizing animal, so it is important to keep animals separated while you aren’t at home. I.D. tags stating that the dog has seizures are important if your dog wanders away from home.
- Write down all circumstances surrounding the seizure, such as changes in food, unusual activities, and medication or vaccinations recently given. Other triggers for seizures may be Flea & Heartworm treatments, yard chemicals for weeds and insects, and household cleaners.
- Be prepared to transport a dog that cannot stand up and walk, or is even in the middle of a seizure. Hard plastic children’s sleds can be used to carry or drag the dog to the car. A heavy blanket folded can also act as a stretcher.

TREATMENT:

Medical treatment is generally advised for animals that have one or more seizures per month. Animals who have cluster seizures or go into status epilepticus may be treated even though the rate of incidence is less than once per month. Successful drug therapy depends upon the owner’s dedication to delivering the drug exactly as prescribed with absolutely NO changes in the dose or type of medication without consultation. Haphazard drug administration or abrupt changes in medication is worse than no treatment at all, and may cause status epilepticus.

William Thomas, DVM, MS feels it important to remember that the *goal of treatment* is to decrease the frequency and severity of seizures and avoid unacceptable side effects. **It may not be possible to stop the seizures altogether.**

- **Phenobarbital** is one of the most commonly prescribed drugs. It is possible that dogs may rapidly develop tolerance to the effects of Phenobarbital. At high concentrations, persistent depressive side effects may appear. Dogs may eat or drink more than their usual amounts. Liver function can be impaired over time. If use of the drug is terminated, signs of physical dependence may develop. There is danger of triggering status epilepticus during withdrawal. Doses should be gradually reduced in small steps over a prolonged period.

- **Primidone’s** side effects include sedation when treatment is initiated, and eating or drinking more than usual. High concentrations of liver enzymes have been reported with prolonged treatment at high dosages. Primidone is broken down to Phenobarbital in the liver.

- **Diazepam** (*Valium*) is used for treatment of status epilepticus. Phenytoin (*Dilantin*), Carbamazepine, and Valproic Acid are not currently recommended for use.

- **Potassium Bromide** (*KBr*) is gaining new recognition for use in refractory (difficult to control) canine epilepsy. It is the anticonvulsant of choice for dogs with liver disease. Sodium Bromide is preferred for dogs with kidney problems. Combining Potassium Bromide or Sodium Bromide with Phenobarbital may be useful for patients who do not respond well to Phenobarbital or Primidone alone. KBr is being used successfully alone in some cases. Side effects of bromide toxicity (Bromism) CAN include uncoordination, depression, muscle pain, and stupor.