



Epileptic seizures and epilepsy Fact Sheet

A seizure (also known as fit) is a non-specific short event with an abrupt start and termination.

The term paroxysmic event (see specific fact sheet) is usually used to generally describe these seizures of uncertain origin. Seizure can relate to a problem in the nervous system (epileptic seizure, narcolepsy/cataplexy, acute balance loss) or a disease in other organ (heart disease causing syncope).

An epileptic seizure has a specific neurological origin. It is not a disease in itself but the sign of an abnormal brain function. Many type of epileptic seizure are described in human, dogs or cats. The most common type is the generalised tonico-clonic epileptic seizure (also known as grand mal). Partial epileptic seizures affect only part of the body and are much more difficult to differentiate from non-epileptic seizure and in particular movement disorder.

Epilepsy in dogs and cats means repeated epileptic seizures due to abnormal activity in the brain. It is caused by an abnormality in the brain itself. If the epileptic seizures occur because of a problem elsewhere in the body, for example a low sugar level, which will starve the brain cells of essential fuel, this is not epilepsy.

What is causing my animal to have epileptic seizure?

Causes of epileptic seizures can be found inside the brain (intra-cranial causes) or outside the brain (extra-cranial causes).

Intoxication and metabolic diseases represent extra-cranial causes. In these cases, the brain is perfectly healthy but reacts by seizing to a toxin ingested by the animal or a change in the blood composition caused by a metabolic problem (liver or kidney disease, salt unbalance, low sugar level, under-active thyroid gland). Hence the term reactive epileptic seizures often used to describe this category of causes. Diagnosis of extra-cranial causes of epileptic seizures is based on a known exposure to toxin by the owner and on blood test.

Intra-cranial causes are divided into primary and secondary epilepsy. In case of secondary epilepsy, the epileptic seizures are a sign of a disease in the brain. This disease might be a brain tumour, an inflammation or infection of the brain (encephalitis), a brain malformation, a recent or previous stroke or head trauma. Epileptic seizures may occur alone or be associated with other symptoms (circling, blindness, wobbliness, restlessness and/or sleepiness). Diagnosis of secondary epilepsy is based on looking for brain disease using MRI or CT-scan of the brain and CSF analysis (see fact sheet neurodiagnostic test).

In case of primary epilepsy in dogs and cats (also known as idiopathic epilepsy), there is no disease in the brain but the epileptic seizures are caused by a functional problem (chemical unbalance between excitatory and inhibitory messengers of the brain).

How common is primary epilepsy in dogs ?

Primary epilepsy is the most common cause of epileptic seizures in dogs. Some breeds (Labrador, Golden retriever, Border Collie, GSD) are particularly predisposed. The seizures' frequency is extremely variable between dogs (from many seizures a day to a seizure every few months). Despite being born with this functional brain disorder, dogs with primary epilepsy usually do not start seizing before the age range of 6 months to 6 years. In the absence of disease affecting the brain, animals are typically normal in between the epileptic seizures.

How do you diagnose primary epilepsy in dogs ?

Primary epilepsy can be suspected as the more likely cause of seizure if the dog 1) is having its first seizure at the age range of 6 months to 6 years, 2) belongs to a breed known to be predisposed to primary epilepsy and 3) is not showing any symptoms in between the seizures. Dogs outside of this age range can still have primary epilepsy, as dogs within the 'typical' age range can have secondary epilepsy or a metabolic disease. The diagnosis of primary epilepsy in dogs and cats is unfortunately a diagnosis of exclusion after elimination of extra-cranial metabolic causes and intra-cranial structural causes. There is no definitive diagnostic test for this condition and all investigations (blood test, MRI scan or CT-scan of the brain and CSF analysis) will come back as normal.

If you are concerned about the health of your pet you should contact your veterinary surgeon.

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