

There are many paroxysmal events which can be confused with seizures at first glance. It is important to perform a full clinical and neurological exam to rule out other conditions before consideration of antiepileptic drug therapy. **Before making a diagnosis of Epilepsy it is worth considering the differential diagnoses related to the presenting symptoms.**

As events are often not witnessed in the clinic, a detailed history, along with asking the client to take videos, is helpful.

DIFFERENTIAL DIAGNOSES OF SEIZURE-LIKE BEHAVIOUR

Breeds predisposed to epilepsy include^{1,2}:

Labrador, Golden Retriever, German Shepherd, Poodle, American Cocker Spaniel, Border Collie, Staffordshire Bull Terrier, Border Terrier, Welsh Springer Spaniel and Irish setter



Clinical signs	Before event		During event						After event	Between events	Additional notes
	Pre-emptive signs	Triggers	Description	Conscious?	Autonomic signs?	Muscle tone	Lateralising signs?	Duration	Changes?	Signs	
Seizure	Can include anxiety, restlessness, seeking contact or affection, withdrawal or hiding, aggression and vocalisation	None or flashing lights, anxiety, stress	Can be focal or generalised. If generalised often shows tonic-clonic movements	Can be conscious if focal seizure. Usually unconscious if generalised	Can show hypersalivation, defaecation, and urination	Usually tonic (hypertonicity) or alternating tonic-clonic movements	In some cases	From seconds to minutes. Over 5 mins = status epilepticus	Can include disorientation, aggression, restlessness, pacing, lethargy, deep sleep, hunger, thirst, ataxia, proprioceptive deficits and blindness	Normal or forebrain signs	Often occurs at rest
Syncope	None	Exercise, excitement	Brief sudden collapse, rapid recovery	Reduced or absent	Can have abnormalities of heart rate and rhythm	Flaccid (all body)	No	Seconds	Nothing abnormal	Can be normal or show arrhythmias, pulse deficits, heart murmurs, cyanosis, abnormal lung auscultation	Can have cough or increased respiratory noise
Narcolepsy/ Cataplexy	None	Eating, excitement	Sudden collapse	Normal if cataplexy, asleep if narcolepsy	Nothing abnormal	Flaccid (all body)	No	From seconds to minutes	Nothing abnormal	Normal or altered sleep/wake cycle, restless	Often young purebred dogs
Neuromuscular weakness	None	Activity, exercise	Stiff, stilted gait before collapse	Nothing abnormal	Nothing abnormal	Often flaccid although can be in spasm with certain myopathies	No	From minutes to hours	Nothing abnormal	Can be normal or can show generalised weakness, muscle atrophy, pain, decreased reflexes	Can have dysphagia, dysphonia, regurgitation, dyspnoea
Paroxysmal behaviour changes (compulsive disorder)	None	Certain behaviours (e.g., fear)	Often stereotypic signs, including pacing, barking, licking, chasing imaginary objects or tail chewing	Nothing abnormal	Nothing abnormal	Nothing abnormal	No	From minutes to hours	Nothing abnormal	Nothing abnormal	Can have a history of anxiety disorder
Vestibular attack	None	None	Head tilt, nystagmus, ataxia, collapse towards side of head tilt	Normal or disorientated	Nothing abnormal	Unilateral decrease in extensor muscle tone	Yes	From seconds to days	Nothing abnormal	Nothing abnormal	Subtle signs of vestibular disease might persist
Paroxysmal Dyskinesia	None	None or activity, excitement and stress	Dystonia, tremors, abrupt muscle contractions including trunk, impaired posture, inability to stand and walk	Nothing abnormal	Nothing abnormal	Hypertonicity (focal or generalised)	In some cases	From seconds to hours	Normal or tiredness	Nothing abnormal	Interaction with the owner can alleviate or interrupt the episode. Consider breed specific disorders and age at onset
Idiopathic head tremor	None	None or stress, fatigue, and overstimulation	Vertical or horizontal rhythmic head movement	Nothing abnormal	Nothing abnormal	Nothing abnormal	No	From seconds to hours	Normal or tired/ restless	Nothing abnormal	Interaction with the owner can alleviate or interrupt the episode

Table adapted from De Risio et al (2015). International veterinary epilepsy task force consensus proposal: diagnostic approach to epilepsy in dogs. BMC veterinary research, 11, 148.

1. Kearsley-Fleet L, O'Neill DG, Volk HA, Church DB, Brodbelt DC. (2013) Prevalence and risk factors for canine epilepsy of unknown origin in the UK. Vet Rec.172(13):338.

2. Erlen, A. et al. (2018) Seizure occurrence in dogs under primary veterinary care in the UK: prevalence and risk factors. JVIM, 32 (5),1665-1676

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