

Exercise Related Collapse

Both conditions related to canine collapse after exercise have been studied only relatively recently. It appears that just certain breeds are prone to each condition. Because the terminology for both have been used interchangeably, the following table is provided to help differentiate them.

Characteristic	Border Collie Collapse (BCC) (Border Collie, Australian Shepherds, Kelpie, Australian Cattle Dog, Bearded Collie, Collie, Shetland Sheepdog)	Exercise Induced Collapse (EIC) (Labrador Retriever; some other breeds especially those used for hunting and field trials)
Age	Usually young, - av 2 yrs	Usually young – av 14 mo
Onset	After 5-15 minutes of exercise – sheep herding or ball/Frisbee chasing	After 5-15 minutes of continuous intense field exercise; personality is hyperexcitable
Gait	Swaying, staggering, and falling to the side. Exaggerated lifting of each limb while walking. Choppy gait. Scuffing of rear and/or forelegs	Rocking or forced gait followed by weakness in rear limbs and inability to support weight. Some dogs may continue to run while dragging back legs. Incoordination of rear limbs with wide-based long loose stride.
Movement	Crossing of legs when turning. Both forelimbs and hind limbs affected simultaneously	Begins in the rear limbs. Some dogs progress to forelimb weakness and occasionally total inability to move.
Muscles	Often stiff	Flaccid when collapsed
Discomfort	Not apparent during handling of muscles, joints or spine during or after an episode.	Not apparent during handling of muscles, joints or spine during or after an episode.
Alertness	Disoriented, dull mentation or loss of focus is often the first sign of a BCC episode	Most are fully alert during collapse. 25% of dogs are reported to have at least one episode of disorientation.
Accompanying events	Excessive panting and severe hyperthermia; no other clinical or lab abnormalities consistent with heat stroke.	Excessive panting and severe hyperthermia; no other clinical or lab abnormalities consistent with heat stroke.
Hyperthermia	Often >41.7C, >107F during exercise, but this is not different from dogs with normal exercise tolerance.	Often >41.7C, >107F during exercise, but this is not different from dogs with normal exercise tolerance.
Lab abnormalities	Not different from dogs with normal exercise tolerance	Not different from dogs with normal exercise tolerance
Recovery	Both gait and mentation return to normal within 30 minutes. Condition can be fatal in a few.	Dogs are normal within 5 to 25 minutes with no residual weakness or stiffness. Condition can be fatal in a few.
Genetic mutation for d-EIC (dynamain-1 associated EIC)	Not present	Present
Genetic mutation for malignant hyperthermia	Not present	Not present

Limitations	Cannot continue with strenuous herding trials	Cannot continue with strenuous retriever training
Treatment	None known at this time.	Some respond to phenobarbital, but no treatment has proven 100% effective

Katie Minor of the University of Minnesota has provided the above table information. She says that after extensive exercise testing of several affected dogs, Dr. Sue Taylor has confirmed the BCC is most likely to be a primarily a neurological condition. In the exercise study there were no detectable laboratory findings suggestive of a muscular disorder, muscle biopsies were normal, and in addition the lack of balance and disorientation all point to a neurological condition.

We believe that BCC could be generalized non-convulsive seizure, not the typical grand mal seizure where the dog shakes violently and paddles the legs.

Current diagnosis is established by a combination of evaluating the collapse characteristics from a questionnaire and video, and ruling out common causes of collapse. We would recommend a CBC, Biochemistry profile, ACTH stimulation test (to rule out low cortisol) and a heart evaluation (ECG at rest and after exercise, chest xrays and echo). If you have access to a veterinary neurologist it might also be useful to have a complete neurologic exam and EEG performed.