

BORDER COLLIE HEALTH TESTS

This document has been prepared as a guide to Border collie owners and breeders, for the Health tests that are available to the breed. I will attempt to update it as and when new tests come along. A list of links to testing laboratories accepted by the K.C. is at the bottom of this list.

Breed clubs often provide clinics collecting samples for DNA testing at discounted rates and details can be found on the [Pastoral breeds Heal foundation web site](#) and [Face Book page](#), and on breed club web sites. D.N.A testing is the most effective means where available, as it gives you the genetic status of your dog, showing Normal, carrier, or effected, which can not always be identified by physical examination.

Two 'normal' parents will not produce a condition. 'Normal' to 'carrier' or 'effected' will produce more 'carriers'. 'Carrier' to 'Carrier' will produce a combination of 'Normal' 'carrier' and 'effected'. 'Effected' to 'Effected' will produce only 'Effected'.

Condition	Impact	Test type	Available from	Inheritance
H.D. Hip dysplasia	Abnormal wear on the ball and socket joint of the hips causes arthritis and pain in the hip joint.	X Ray	Normal vet. Then x ray submitted to the B.V.A for scoring, 0 – 53 for each hip. The higher the total score the worse the condition. Breed average total 11. (from BVA list, 2016)	A combination of several inherited factors, plus rearing methods, over exercising, and feeding regime.
Elbow Dysplasia	Abnormal development of the elbow joint hips causes arthritis and pain in the elbow joint.	X Ray	Normal vet. Then x ray submitted to the B.V.A for scoring, each elbow scores 0 – 3. The higher the grade the worse the condition.	A combination of inherited and environmental factors.
C.E.A Collie Eye Anomaly	A congenital, inherited eye condition that can vary from mild, to severe, causing blindness.	D.N.A.	Cheek Swabs available from laboratory or a P.B.H.F. clinic, or blood taken by a vet, can be taken by the owner and sent off to approved laboratories for testing. Results are sent back to owners.	Recessive, genetical condition. Both parents must carry (or have) the condition to produce it in pups. A 'normal' parent will not produce it but could produce more carriers if mated to a carrier or effected.
P.R.A. Progressive Retinal Atrophy	Progressive Retinal Atrophy (PRA) is an inherited eye disease of the retina. These dogs have eyes which are genetically programmed to go blind.	Physical eye test	A PRA test is routinely performed by a BVA eye panellist to check for PRA at 12 monthly intervals.	Effected dogs should not be bred from. No D.N.A. test currently available.
Gonyoscopy	Narrow drainage angles within the eye cause a build-up of pressure causing glaucoma and pain and necessitating eye removal in some cases.	Physical eye test	A clinical gonioscopy examination performed by a BVA eye panellist to assess the drainage angles of the eye.	Still under investigation, but poor drainage angles are known to cause this condition, and some form of inheritance is most likely.
Goniodysgenesis	An abnormality within the eye associated with primary closed angle glaucoma. The	D.N.A.	Cheek Swabs available from laboratory or a P.B.H.F. clinic, or blood taken by a vet, can be taken by the owner	Recessive, genetical condition. Both parents must carry (or have) the condition to produce it

	fluid in the eye does not drain properly, resulting in excessive pressure build up, which if untreated will eventually cause permanent damage to the optic nerve & ultimately blindness.		and sent off to approved laboratories for testing. Results are sent back to owners.	in pups. A 'normal' parent will not produce it but could produce more carriers if mated to a carrier or effected.
T.N.S. Trapped Neutrophil Syndrome	An immune system disease where the white blood cells produced by the bone marrow become "trapped" and cannot be effectively released into the bloodstream. The dog is unable to fight infection will become ill & eventually die from infections.	D.N.A	Cheek Swabs available from laboratory or a P.B.H.F. clinic, or blood taken by a vet can be taken by the owner and sent off to approved laboratories for testing. Results are sent back to owners.	Recessive, genetical condition. Both parents must carry (or have) the condition to produce it in pups. A 'normal' parent will not produce it but could produce more carriers if mated to a carrier or effected.
C.L. Ceroid Lipofuscinosis	Also known as storage disease is a rare disease which affects the nerve cells of the body. Most symptoms do not appear until the age of 18 months, but then increase rapidly with dogs rarely living past the age of 2 ½ years. Symptoms, which include apprehension, abnormal gait & demented behaviour increase rapidly after onset.	D.N.A.	Cheek Swabs available from laboratory or a P.B.H.F. clinic, or blood taken by a vet can be taken by the owner and sent off to approved laboratories for testing. Results are sent back to owners.	Recessive, genetical condition. Both parents must carry (or have) the condition to produce it in pups. A 'normal' parent will not produce it but could produce more carriers if mated to a carrier or effected.
I.G.S. Vitamin B12 Deficiency	A genetic disorder by which the vitamin B12, fails to be absorbed from the intestine. Lack of B12 leads to changes in the hematopoietic system and to neurological symptoms due to irreversible damage of the brain and nervous system. Symptoms include anorexia, lethargy and failure to gain weight.	D.N.A.	Cheek Swabs available from laboratory or a P.B.H.F. clinic, or blood taken by a vet can be taken by the owner and sent off to approved laboratories for testing. Results are sent back to owners.	Recessive, genetical condition. Both parents must carry (or have) the condition to produce it in pups. A 'normal' parent will not produce it but could produce more carriers if mated to a carrier or effected.
S.N. Sensory Neuropathy	A neurological disease caused by the progressive degeneration of sensory and motor nerve cells. The onset of the disease occurs between 2 to 7 months of age and quality of life is severely affected, Symptoms include knuckling of the feet, self-mutilation wounds and incoordination of gait, with a progressive loss of sensation occurring in all limbs.	D.N.A.	Cheek Swabs available from laboratory or a P.B.H.F. clinic, or blood taken by a vet can be taken by the owner and sent off to approved laboratories for testing. Results are sent back to owners.	Recessive, genetical condition. Both parents must carry (or have) the condition to produce it in pups. A 'normal' parent will not produce it but could produce more carriers if mated to a carrier or effected.
M.D.R.1 Multi Drug Resistance gene	The MDR1 gene is responsible for ensuring that the P-glycoprotein functions normally by protecting the body from toxins. In	D.N.A.	Cheek Swabs available from laboratory or a P.B.H.F. clinic, or blood taken by a vet can be taken by the owner	Recessive, genetical condition. Both parents must carry (or have) the condition to produce it in pups. A 'normal' parent will not produce it but

	MDR1 affected dogs the function is compromised and therefore toxins (from environment or drugs etc) may leak into the major organs.		and sent off to approved laboratories for testing. Results are sent back to owners.	could produce more carriers if mated to a carrier or effected.
Deafness	A small percentage of Border Collies suffer from either partial or total hearing loss.	Physical hearing test	BAER Hearing testing can be performed on puppies & adult dogs to establish the status of their hearing, at specialist clinics around the country.	Unknown currently.
D.H. Raine Syndrome	Extreme wear of the teeth, normal mineralization of the teeth does not occur. This means that the teeth are not as strong as they should be and are more vulnerable, leading to excessive wear.	D.N.A.	Cheek Swabs available from laboratory or a P.B.H.F. clinic, or blood taken by a vet can be taken by the owner and sent off to approved laboratories for testing. Results are sent back to owners.	Recessive, genetical condition. Both parents must carry (or have) the condition to produce it in pups. A 'normal' parent will not produce it but could produce more carriers if mated to a carrier or effected.

Laboratories accepted by the kennel club. These laboratories will send your dogs results direct to the KC as well as to owner, to add to registration certificates and help with research. [Animal Genetics UK](#), [Optigen](#), [Animal DNA Diagnostics](#), [Laboklin](#), [Pet Genetics Lab](#), [Petagenics](#) , [AHT](#).