



Cavalier King Charles Spaniel Health Breeding Programme

The canine genetics team at the Animal Health Trust (AHT) is working to develop a Health Breeding Programme for the Cavalier King Charles Spaniel, aimed at reducing the prevalence of syringomyelia and mitral valve disease in the breed.

In the first phase of the project we have worked with data collected by Dr Clare Rusbridge (veterinary neurologist) and Penny Knowler from Stone Lion Veterinary Centre to demonstrate that syringomyelia is highly heritable. We are also working to establish the heritability of mitral valve disease (MVD) using data collected by Mr Simon Swift (veterinary cardiologist) and The Cavalier King Charles Spaniel Club. We are developing a genetic evaluation scheme for both these diseases based on the estimation of breeding values.

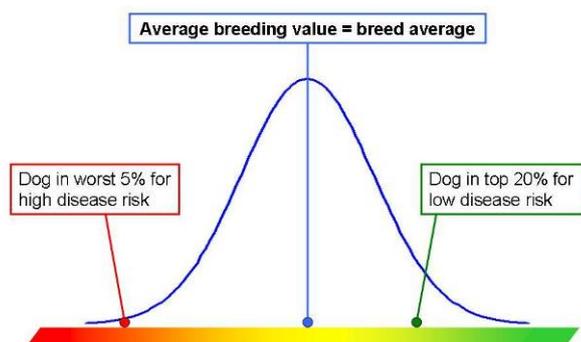


A puppy's EBV may be modified in the light of its own subsequent clinical record or screening results, by information coming from other relatives and eventually by information from its progeny.

DNA testing can be used to increase the information available for the calculation of breeding values and is particularly useful for providing information about young dogs prior to their use for breeding. Research at the AHT is ultimately aimed at the development of genomic breeding values (geBVs), these will be similar to EBVs but will incorporate information from DNA testing.

What are estimated breeding values or EBVs?

Pedigree information and population-wide data on disease, such as that collected as part of health screening schemes, are analysed using advanced statistical techniques to calculate the extent to which a disease is genetic (its heritability) and this information is used to determine EBVs. Complex diseases, such as hip dysplasia and MVD, are caused by a combination of genetic and environmental effects. EBVs are an objective numerical assessment of the genetic status of an individual dog, with environmental effects removed. Using EBVs will allow breeders to distinguish between dogs of high and low genetic risk when selecting parents.



An EBV gives an individual dog a genetic risk score or rating relative to other dogs in the breed

EBVs can be obtained for all Cavaliers – in the first instance this will be all Kennel Club registered dogs. They can be calculated for most dogs even if they have not been health screened themselves, as long as they are related to enough dogs that have been screened. The EBV of puppies at birth will be half the EBV of their sire plus half the EBV of their dam.

How can you help?

• Send in your health screening results

If your Cavalier has been MRI scanned for syringomyelia and/or screened for mitral valve disease (heart murmur) then we would like to have a copy of the results certificates, together with the Kennel Club registered name and number of the dog **or** a 5-generation pedigree. For quality control purposes we cannot include in our database screening information about a dog unless we hold a copy of the results certificate and have owner consent to have it. All results certificates and the actual disease status of individual dogs will remain completely confidential and will not be shared with any other parties outside the AHT.

All copies of screening results and pedigrees should be sent to:

Dr Sarah Blott,
CKCS Health Breeding Programme,
Animal Health Trust,
Lanwades Park, Kentford,
Newmarket,
Suffolk CB8 7UU

Or electronic copies of the documents (e.g. pdf files) can be e-mailed to BreedingForHealth@aht.org.uk

• Donate a DNA sample from your dog

We are also collecting cheek swab samples from Cavaliers for DNA archiving and for research to develop genomic breeding values for syringomyelia and MVD.

To request a DNA cheek swab kit please e-mail BreedingForHealth@aht.org.uk or telephone Lisa Jeffery on (01638) 750659 ext 1214