



## KC/VCS CKCS Heart Scheme Frequently Asked Questions

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### What are the requirements for my dog to participate in the Scheme?

- Your dogs must have been microchipped (this will be checked and recorded at the assessment).
- This trial is only open to Kennel Club registered dogs. KC registration certificates must be presented at the assessment.

### At what age should my dog be assessed?

To gain the maximum benefit from the Scheme it is important that your dog is first assessed between 18 months to two years old.

### How often should I get my dog assessed?

If still being used for breeding, your dog should be reassessed at two yearly intervals (i.e. four years old and six years old) to monitor the health of their heart.

### What happens during an assessment?

The cardiologist, or their administrator, will collect some details about you and your dog for an electronic form and will ask you to check that this information is correct. You will then be asked to give permission for this data to be used by the Kennel Club and Veterinary Cardiovascular Society (VCS) cardiologists for health and research purposes.

The assessment is split into two parts which are carried out by a VCS trained and approved cardiologist (on the VCS Doppler approved/ CKCS trained list).

- For the first part the cardiologist will listen to your dog's heart using a stethoscope (this process is known as auscultation) to check for any heart murmurs. The details of this assessment will be recorded and a grade given.
- For the second part of the assessment, the cardiologist will carry out a non-invasive ultrasound called an echocardiogram, which checks the health of the heart valves, specifically looking for the presence and degree of any mitral valve prolapse (carried out to the agreed VCS protocol for examination of hearts and valves). The details of this will be recorded and a grade given

If a grade 3 to 6 or higher murmur is detected during the auscultation there is an option not to continue for echocardiographic screening dependent on your wishes.

Once assessed, the cardiologist will talk to you about their findings and the grading result. The grades will then be recorded on the electronic form along with any additional comments.

Once the assessment is complete you will be emailed a copy of the electronic form. A copy of the form will be sent to the Kennel Club and kept by the cardiologist for their records.

### **How much does an assessment cost?**

Fee ranges, volume dependencies and guidance on this are publically available and ready for any groups wishing to hold sessions for CKCS breeders & owners, please refer to the regional cardiologists list.

The Kennel Club will charge a set £5.00 administration fee per dog which will be added to the cardiologist fee per dog at time of assessment. You will pay the cardiologist the fee in full including admin fee and the cardiologist will have an arrangement with the Kennel Club for administration fees.

### **What constitutes a day/group session?**

A day/group session is a full day of testing by a VCS member outlined on the regional cardiologist list. The number of dogs the cardiologist is able to assess within a day may vary and should be discussed individually with the cardiologists.

### **How will results be recorded and published?**

The results (murmur grade and mitral valve prolapse grade) will be reported to you at the time, and the cardiologist may suggest in the comments section if your dog has a 'heart recommended or not recommended for breeding'.

results will be recorded on an electronic form, recording details of any murmur heard and mitral valve prolapse grade. A comment box will be present for any other pertinent cardiac information to be recorded. Further cardiac examination details will be recorded for ongoing KC/ VCS research into heart disease in CKCS.

The electronic form will come in to the Kennel Club Breeder Services Team via email [healthresults@thekennelclub.org.uk](mailto:healthresults@thekennelclub.org.uk). The grade(s) will be added to your dog's record and the original form will be saved on file by the Kennel Club.

Results will not be published during the trial and a further discussion regarding publication will take place as part of the trial review which will involve consultation with the breed via breed health co-ordinator.

The Kennel Club will record and retain the health information centrally for the purpose of ongoing data collection and health research.

### **Will information be available on the Kennel Club website regarding Mitral Valve Disease in the CKCS and breeding guidelines which explain the grades?**

Yes, the Kennel Club and VCS have developing breeding guidelines. The Kennel Club Genetics and Health Screening Sub-Group of the Dog Health Group and the CKCS Breed Clubs on these once the trial results are available and before the KC/VCS CKCS Heart Scheme was launched.

All of the information relating to the scheme and the breeding guidelines are available on the Kennel Club website.

### **Can I still have my dog assessed using the CKCS Club Heart scheme?**

An auscultation only scheme, without echocardiogram, will initially run in parallel with the KC/VCS scheme, which follows the same procedures as the scheme currently run by The Cavalier Club.

This involves auscultation of the dog's heart from 12 months and above on a yearly basis by a VCS approved cardiologist. The presence or absence of any murmur will be recorded, graded and described. Your details, as well as your dogs and their microchip details will be recorded in the same way as for the KC/VCS scheme.

This data will be stored by the KC to enable analyses of these data to be run in conjunction with the echocardiography scheme. For more details about this scheme, please contact your local breed club.

### **Will overseas dogs entering breeding programmes in the UK be able to participate in the UK scheme?**

Imported dogs will be recommended to participate in the UK or Danish scheme and are recommended to have undergone heart testing prior to being used for breeding in the UK.

### **What happens if I wish to appeal?**

You can have the result reviewed by sending an appeal in to the Breed Health VCS Committee with an image review fee of £60.00. An independent VCS trained Diplomate Cardiologist, (anonymous to the VCS cardiologist and original result) will then review the images. If the reviewing cardiologist agrees with the original assessment there is no further action and the certification stands. Should the new assessment disagree with the original the new assessment will stand, and the new score results will be relayed in the normal way. The original certificate against which the appeal was made will be retained. There can only be one appeal.



**THE KENNEL CLUB**  
*Making a difference for dogs*

## KC/VCS/CKCS Heart Scheme Breeding Guidelines

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Mitral valve disease is a complex condition, affected by both genes and environmental factors. Thus it can be challenging to make breeding decisions with the aim of reducing the genetic risk over generations. However, multiple studies have estimated that there is a moderate to high heritability of mitral valve disease (MVD) in the Cavalier King Charles Spaniel, implying that selective breeding can enable breeders to greatly reduce the incidence and severity of the disorder. Carefully applied this can allow breeders to continue with their bloodlines while making balanced breeding decisions.

The advice below provides guidelines which will help reduce the risk of producing affected puppies. However, following these guidelines cannot be used as a guarantee that an individual dog will not be affected by MVD to some degree (given the complex nature of the condition). The screening consists of auscultation (listening to the heart using a stethoscope), which gives a murmur grade, and an echocardiograph (cardiac ultrasound), which gives a Mitral valve prolapse (MVP) grade, and both of these results are used to determine the outcome of the test. Some dogs can have quiet murmurs which are NOT caused by mitral regurgitation or other heart disease, and these murmurs are termed 'innocent' or 'flow' murmurs. These can only definitively be determined using a heart scan, and dogs with innocent murmurs should not be excluded from breeding.

Mitral valve regurgitation murmur is graded 0-6 with 0 indicating no murmur and 6 indicating the most severe murmur (and hence the most severe mitral valve regurgitation).

MVP is graded 0-3 as follows:

- 0 - none
- 1 - mild
- 2 - moderate
- 3 - severe

Dogs with grade 0 or 1 murmur plus grade 0 or 1 MVP, or dogs considered to have an 'innocent' murmur, (both categorised as green under the traffic light system shown below) are considered to be at the lowest risk of developing clinical mitral valve disease and to represent the lowest breeding risk. Dogs with a grade 2 murmur OR grade 2 MVP (but not both), denoted amber, have a greater risk of developing a passing on the condition to

offspring. The KC advises that, to reduce the genetic risk of MVD in offspring, that only amber dogs in excellent health, and with good results from other screening schemes, may be used cautiously for breeding with particular care to use mates which have been categorised as green under this traffic light scheme, preferably at 4 years of age or older. Dogs categorised as amber at 4 or 6 years of age (or older) are considered to represent less of a risk than those categorised as amber at the first examination at 18months-2 years. Dogs which are categorised as red, with a grade 3 murmur or higher, grade 3 prolapse or significant congenital heart disease represent the greatest breeding risk and it is advised that these dogs are not used for breeding. This advice is summarised in the table below. The advice may change, however, as further research is undertaken.

Murmur grade /Mitral Valve Prolapse	Murmur grade 0	Murmur grade 1	Murmur grade 2	Murmur grade 3+
Mitral Valve Prolapse 0	Green	Green	Amber	Red
Mitral Valve Prolapse 1	Green	Green	Amber	Red
Mitral Valve Prolapse 2	Amber	Amber	Red	Red
Mitral Valve Prolapse 3	Red	Red	Red	Red

Green: dogs with grade 0 or 1 murmur plus 0 or 1 MVP  
 Dogs considered to have an 'innocent' murmur (possibly up to grade 2)  
 Amber: dogs with grade 2 murmur OR grade 2 MVP  
 Red: dogs with grade 2 murmur AND grade 2 MVP  
 Dogs with grade 3 murmur or higher  
 Dogs with grade 3 prolapse  
 Dogs with significant congenital heart disease

### Making balanced breeding decisions

Mitral valve disease is not a condition that is present at birth, therefore the older that a dog is at testing; the more confident we can be about the result of its test. We therefore recommend that dogs are as old as possible when breeding is undertaken and that where possible the results of older relatives is also taken in to account.

As well as considering the implications of the condition you are concerned about, there are other equally important factors to consider when deciding whether two dogs should be mated together, such as temperament, genetic diversity, conformation, other available health test results, the general health of the dogs etc. Your breeding decisions should always be well balanced and take into consideration the qualities and compatibility of both the sire and dam that you are considering.