

British Veterinary Association/Kennel Club Elbow Dysplasia Scheme – Procedure Notes

These procedure notes are intended to explain the BVA/Kennel Club Elbow Dysplasia Scheme and to provide helpful instruction to those using the scheme. They are due to be effective from 22 March January 2022 and replace all previous documents in relation to the scheme. These notes may be modified from time to time; please consult the [BVA website](#) for the latest version.

Introduction

Elbow Dysplasia (ED) is a common multifactorial condition manifesting as a variety of developmental disorders of the canine elbow and leading to osteoarthritis of the elbow joint(s). The disease has a strong genetic component and therefore screening of dogs' elbows by radiography and grading the changes will help breeders to select the most suitable dogs for breeding. For the scheme to be meaningful and successful it is important that images from EVERY dog radiographed be submitted for grading, whether or not the animal is required for breeding and whatever the state of the elbows, in order to provide the widest possible information for use by a geneticist and for generation of estimated breeding values (EBVs). Further information about elbow dysplasia and the use of the grading scheme is available in the Canine Health Schemes section of the [BVA website](#).

1. The scheme

The main purposes of the scheme are the examination of radiographs of elbows of dogs for signs of any primary lesion(s) and/or osteoarthritis caused by the conditions which are collectively termed 'elbow dysplasia', and the issue of a certificate in respect of that examination. The scheme is open to all dogs and is not restricted to those which are registered with the Kennel Club. The examination is conducted by the evaluation of radiographic changes indicative of ED and a grade for each elbow joint is recorded; the overall grade is that given to the elbow with the higher grade. It is strongly recommended that breeders wishing to reduce the risk of ED in progeny should select their breeding stock (both dogs and bitches) from animals with an overall elbow grade of 0 as well as giving consideration to the ED grades of related animals. Dogs with elbow grades of 2 or 3 have marked osteoarthritis likely to be due to ED, and/or a visible primary lesion. Dogs with elbow grades of 1 show mild or early osteoarthritis which is also likely to be due to ED. Lameness is not a good indicator of elbow status and many dogs with ED do not show signs of lameness (i.e. they are affected subclinically). Dogs with subclinical ED are more likely to produce clinically affected (lame) progeny than are dogs with normal elbows. The ED Scheme does not cover any other hereditary or clinical defects which may need to be considered when choosing suitable breeding stock. However, breeders wishing to have their dogs graded for hip dysplasia as well as elbow dysplasia may have the hips and elbows radiographed at the same time and the submissions sent together. In such cases these

procedure notes will have to be read in conjunction with those for the BVA/Kennel Club Hip Dysplasia (ED) Scheme (details available from [BVA website](#)).

2. Breed specific statistics

The breed specific statistics include Elbow Dysplasia results for all breeds that have been tested since 1999 broken down by breed and grade to give a representative overview of the ED status of the dogs graded in that breed. When the certificate is available to the submitting veterinary surgeon, a copy of the current breed specific statistics can be obtained from the [BVA](#) and [Kennel Club](#) websites so that the veterinary surgeon may best advise his/her client regarding the dog's suitability for breeding.

3. Arranging radiography and submission to the scheme

The dog's owner should approach his or her veterinary surgeon and request that the Elbow radiographs should be acquired and submitted for scoring under the Scheme. It is possible to arrange for radiographs of more than one dog to be submitted on the same occasion. The following procedure should be observed:

- a) the **minimum** age of a dog for submission under the Scheme is one year. There is no upper age limit;
- b) the dog must be permanently identified by either microchip or tattoo;
- c) suitable arrangements must be made with the veterinary surgeon for the dog's Elbows to be radiographed;
- d) the following documents must be made available at the time of radiography if it is registered with the Kennel Club (KC):
 - i) the KC Registration Certificate of the dog,
 - ii) any related transfer or change of name certificate;
- e) prior to radiography of the dog's Elbows, the owner and Veterinary Surgeon must complete the "Owners Details" and "Dogs Details" section of the online submission portal, verifying that the details given in these sections relate to the dog being submitted, that the details are correct and granting permission for the results to be used in the ways specified.
- f) The owner must read the declaration and acceptance of terms and confirm agreement.

NB Once a certificate of ED scoring has been issued for a dog, the dog's radiographs may not be resubmitted for scoring under the Scheme other than via an Appeal (see section 8).

4. Procedure for radiography of the Elbows

The following views of each elbow joint are required for grading under the Scheme:

Two mediolateral views, which must be:

- a) with the elbow in an extended position of about 110°;

- b) with the elbow in a flexed position of about 45°. The veterinary surgeon should radiograph the dog's elbows as indicated below.

4.1 Protection of Personnel

The Guidance Notes for the Safe Use of Ionising Radiations in Veterinary Practice (2017), which are based on the [Ionising Radiations Regulations 2017](#), explain that only in EXCEPTIONAL circumstances should dogs be manually restrained for radiography. Since the radiography of dogs for the purposes of this Scheme would not constitute exceptional circumstances:

- a) it is NECESSARY to employ general anaesthesia, narcosis or deep sedation to enable only mechanical (i.e. nonmanual) restraint for the positioning of the animal;
- b) collimation of the primary beam should be clearly visible on the radiograph.
- c) the X-ray beam must be projected vertically downwards, perpendicular to the table top.

4.2 Positioning

Standard positions for radiography must be employed. Accordingly for both left and right elbow joints:

- a) the dog should be placed on its side with the elbow to be radiographed closer to the table; the upper limb should be secured with a tie and retracted caudally and dorsally so as not to overlay the joint being radiographed.
- b) a cassette without a grid should be placed beneath the elbow being radiographed and a left or right marker used as appropriate.
- c) for the extended mediolateral view the thoracic limb should be extended and supported underneath the carpus and foot, if necessary, so that it is parallel to the table top. The angle between the humerus and antebrachium should be 110°.
- d) for the flexed mediolateral view, the dog should be positioned in the same way but with the elbow flexed so that the angle between the humerus and the antebrachium is 45°. Overflexion may cause rotation of the joint.
- e) the centring point for both views, by palpation, should be the condyle of the humerus; the X-ray beam should be collimated to include approximately the distal 1/3 of the humerus and the proximal 1/3 of the antebrachium. The dog should be turned over and the procedure repeated for the other elbow joint.
- f) To obtain correct positioning, please refer to the “how to” positioning videos on the [BVA YouTube Channel](#).

NB Radiographs which are not correctly positioned may be rejected, and appropriately-positioned radiographs requested.

4.3 Markers and identification

The following information **MUST** be included on digital images:

- a) **BOTH**
 - i) the Kennel Club Registration Number (from the top right hand corner of the KC Registration Certificate) for dogs registered with the KC (**no other form of identification for KC registered dogs is acceptable**). For dogs not registered with the KC, identification as used by the veterinary practice, other registering body or breed club may be used. **AND**

- ii) microchip or tattoo number
- b) the date of radiography
- c) left and/or right marker(s).

NB Radiographs which are not correctly identified will be returned to the submitting veterinary surgeon and an appropriately identified radiograph requested.

4.4 Image quality

Correct exposure is essential to provide a radiograph of good diagnostic quality. When radiographing a large or overweight dog with either conventional or digital systems, it is usually necessary to use a grid to minimise the effects of scattered radiation on the image. The image should show good radiographic definition and contrast, and the dorsal acetabular edges (DAE) should be visible superimposed by the femoral heads. The radiograph should be checked for correct positioning, exposure and image quality while the dog is still restrained in case a further radiograph needs to be taken.

4.5 Uploading images

When making your submission, you can upload your radiographs directly to this online portal. All radiographs must be in a DICOM (.dcm) format - all other image types including JPEG, TIFF, EPS and GIF will not upload.

DICOM files are typically large and how much time it will take to upload to this portal will depend on a number of factors including your internal practice network and internet connection. We suggest you shouldn't try to upload multiple submissions across lots of browser windows at the same time as this will cause your uploads to slow down.

Radiograph machines typically save radiographs with long numerical file names. This makes it tricky to identify them when you try to upload them to the portal. To make this easier we suggest saving the dog name as part of the file name. For example: "Millie Gillon-Left Elbow-Ext-1.DICOM". It is important that each file is saved under a unique name because files with an identical name cannot be uploaded.

5. Submission

The procedure for submission under the scheme is as follows:

- a) The veterinary surgeon is responsible for uploading the images and providing the correct details (as the owner would want to see them appear on the completed certificate) on the submission portal.

NB The veterinary surgeon should check that the breed, colour and sex of the dog correlate with those details in the Owner's Declaration and on the KC Registration Certificate. The veterinary surgeon should also check that the details on the KC Registration Certificate have been accurately and completely transposed by the owner.

6. Grading

The procedure for grading under the scheme is as follows:

- a) Scrutineers, appointed by BVA, meet frequently to score the radiographs. Two scrutineers agree the score for each radiograph;
- b) For each elbow joint a grade is derived by evaluation of the margins of the joints and the bone structure for signs of primary lesions and/or osteoarthritis of the elbow. Four grades are possible under the Scheme; the minimum grade for each elbow is 0 and the maximum is 3. The overall grade given for both elbows is the grade given to the elbow with the higher grade. The LOWER the grade the less the degree of ED evident on the radiograph.

NB If there appear to be any inconsistencies or inaccuracies with the owners or dogs details, the submission will be returned to the veterinary surgeon with relevant comments, prior to scoring.

6.1 Reject radiographs

If a radiograph is rejected, the fee will not be refunded and will require a subsequent radiograph submitted for the dog. It must be accompanied by a further fee (see Schedule 1).

7. Results

The results of grading are normally available to the submitting veterinary surgeon within two weeks from receipt by BVA of the correct submission. The arrangements are as follows:

- a) once a submission has been graded by the CHS scrutineers, a locked PDF copy will be made available in the Submission history section of the portal. Veterinary surgeons will be able to download a copy and pass on a copy to the dog owner. The results will also be published on the Kennel Club website if the dog is registered with the UK Kennel Club.
- b) relevant details may be sent to a geneticist for statistical analysis or creation of EBVs as arranged by BVA.

7.1 Requests for results

Owners can request to receive direct email updates from CHS on the progression of their submission. Owners should let their veterinary surgeon know that they would like to receive updates and the veterinary surgeon is then responsible to select this feature when making a submission.

- a) Pending results:
 - i) an owner must contact the submitting veterinary surgeon, NOT BVA, for results issued under the scheme;
- b) Past results:
 - i) results for KC-registered dogs which have previously been published are available on the Kennel Club website;
 - ii) any results which have not been published should be sought directly from the owner(s) of the dog;

8. Appeals procedure

An owner has a right to appeal with regard to the results of a HD score. The procedure is as follows:

- a) any application for appeal against the result of a HD score must be lodged by the owner to the submitting veterinary surgeon **within 45 days** from the date of dispatch from BVA.
- b) the veterinary surgeon who originally took the radiographs and submitted them to scheme, will then need to find the relevant submission on the online portal under Submission history, and then commence the appeals procedure by selecting 'appeal' and following the relevant prompts.
- c) the radiograph will be re-scored by a further pair of scrutineers and then by the Chief Scrutineer, whose decision will be final.
- d) the final result will then be relayed to the submitting veterinary surgeon by email and the original certificate will be kept by CHS
- e) please be aware that the appeal process is prepared to either endorse, raise, or lower the score/grade, the cost of an appeal is £127.20 and the process can take up to 4 weeks.

Schedule 1

Charges as at 1 January 2022

The scale of fees as at 1 January 2022 is set out on the [BVA website](#). These charges do not include the cost of radiography and may be changed from time to time. Any changes will be notified by further communication.

NB Radiographs which are judged by the scrutineers as unsuitable cannot be scored. BVA will not refund submission fees for rejected radiographs

Schedule 2

BVA/KC Elbow Dysplasia Scheme: Panel of Scrutineers as at 22 March 2022

The BVA appointed panel of scrutineers detailed below may be changed from time to time. Any changes will be notified by further communication.

Dr J V DAVIES BVetMed PhD DVR DipECVS DipECVDI FRCVS (Chief Scrutineer)
Dr A ANDERSON BVetMed PhD DSAS (Orth) FRCVS
Mrs E A BAINES MA VetMB DVR DipECVDI MRCVS
Mr D D CLARKE MA VetMB DVR CertSAC MRCVS
Mr D G CLAYTON JONES BVetMed DVR DSAO HonFRCVS
Dr R DENNIS MA VetMB DVR DipECVDI FRCVS
Dr C GIBBS BVSc PhD DVR DipECVDI HonFRCVS
Prof M E HERRTAGE MA BVSc DVSc DVR DVD DSAM DipECVDI Dip ECVIM FRCVS
Mr J E F HOULTON, MA VetMB DVR DSAO FRCVS
Mr B M TURNER BVSc (Massey) DVR DipECVS CertSAO MRCVS