

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

These procedure notes are intended to explain the above Scheme and to provide helpful instruction to those using the Scheme. They are due to be effective from 1 January 2011 and replace all previous documents in relation to the Scheme. They may in the future be replaced or modified by further communication.

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 films of each elbow from animals intended for breeding are examined. It is also important to monitor ED in the progeny of breeding stock. Many breeds are susceptible to ED but there is a higher incidence in certain breeds (see Schedule 1).

1. The Scheme

The main purposes of the Scheme are the examination of radiographs of both 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 examination is conducted by the evaluation of radiographs for any anatomical and pathological changes indicative of elbow dysplasia and a grade for each elbow joint is recorded. An overall grade is given which is that given to the elbow with the highest grade. The overall grade is intended to assist dog breeders in their selection of breeding stock. It is recommended that breeders wishing to reduce the risk of elbow dysplasia should select their breeding stock (both dogs and bitches) only from animals with overall elbow grades of 0 or 1. Lameness is not a good indicator of elbow status and many dogs with ED do not show signs of lameness (ie they are affected sub clinically). Dogs with sub clinical ED are more likely to produce clinically affected (lame) progeny than 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 (HD) Scheme (details available from BVA).

2. Arranging for Radiography and Submission to the Scheme

The veterinary surgeon may advise the owner or the owner may approach his or her veterinary surgeon and request that the dog be submitted for grading under the ED Scheme. This may be done at the same time as radiography for the BVA/KC HD Scheme and, if so, the HD Scheme procedure notes must be followed. It is possible to arrange for 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 both of the dog's elbows to be radiographed;
- (d) the following documents must be made available at the time of radiography –
 - (i) the Kennel Club (KC) Registration Certificate of the dog if it is registered with the KC,
 - (ii) any related transfer or change of name certificate;
- (e) prior to radiography of the dog's elbows, the owner must complete and sign the first section of the certificate (the Owner's Declaration) verifying that the details given in that section relate to the dog being submitted, that the details are correct and granting permission for the results to be used in the ways specified. The certificates are provided by BVA.

NB Once a certificate of elbow dysplasia grading has been issued for a dog, the same dog may not be resubmitted for grading under the Scheme.

3. 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 –

- (i) a neutral lateral (110°);
- (ii) a flexed lateral (45°).

The veterinary surgeon should radiograph the dog's elbows as indicated below.

3.1 Protection of Personnel

The Guidance Notes for the Protection of Persons Against Ionising Radiations Arising from Veterinary Use (1988) 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 (ie non-manual) restraint for the positioning of the animal;
- (b) collimation of the primary beam should be clearly visible on the radiograph.

3.2 Positioning

A standard position 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 closest to the table (the upper leg 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 neutral lateral view, the foreleg should be **FULLY** extended and supported underneath the carpus and foot, if necessary, so that the foreleg is parallel to the film so that the angle between the humerus and forearm is 110°;
- (d) for the lateral flexed view, the dog should be positioned in the same way but with the lower foreleg flexed so that the angle between the humerus and the forearm is 45°;
- (e) the centring point for both views should be the condyle of the humerus and the x-ray beam should be collimated to include no more than the lower 1/3 of the humerus to the upper 1/3 of the forearm. It should be possible in most cases to fit both views on one film, taking care to cover with lead the half of the film not being exposed each time.

The dog should be turned over and the same procedure repeated for the other elbow joint.

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

3.3 Markers and Identification

The following information **MUST** be radiographed onto the film or digital image at the time of exposure or by light marker onto the film before processing –

- (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 or by the 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.

3.4 Image Quality

Correct exposure and processing (developing, fixing and washing) are essential to provide a radiograph of good diagnostic quality. Incorrect exposure and processing can seriously interfere with the visibility of detail and so affect the radiological assessment of the elbows. Extraneous marks from screen contamination, splashes, scratches etc should be avoided. The radiograph should be checked immediately after processing (while the dog is still restrained) for correct positioning, exposure and film quality in case a further radiograph needs to be taken.

NB Radiographs which are not of acceptable diagnostic quality to the scrutineers will be returned to the submitting veterinary surgeon and a radiograph of appropriate quality requested.

* 3.5 Digital Films

Digital images may be submitted as DICOM files, one dog per disc. For legal reasons the KC registration number, microchip/tattoo number and date of radiography must be made part of the RAW image by:

1. Using radio-opaque tape at the time of exposure, or
2. Annotating the image using software to burn the information into the image.

Images may also be printed from the original DICOM file and submitted as dry laser images or highest quality photographs. The image must include at the time of radiography a known millimetre scale and have a size variation of no more than 10%.

4. Submission and Grading

The procedure for submission and grading under the Scheme is as follows:

- (a) the veterinary surgeon sends the radiographs to BVA with the elbow dysplasia certificate, having signed the middle part (the Submitting Veterinary Surgeon's Certificate) to certify –
 - (i) the details regarding the submission of the radiographs, and
 - (ii) the microchip number or tattoo number once verified by ticking the box;

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 onto the elbow dysplasia certificate eg the Kennel Club registered name, number, breed, sex and date of birth. Microchip labels may not be used on the certificate – the number must be written on.

- (b) the current fee (see Schedule 2) must be included with the submission and cheques must be made payable to BVA. The BVA charge includes the scrutineers' fees but does not cover the cost of radiography;
- (c) scrutineers, appointed by BVA, meet frequently to grade the radiographs. Two scrutineers agree the grade for each radiograph. The grades are based on the International Elbow Working Group (IEWG) grading criteria for the views specified;
- (d) 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 that was given to the elbow with the highest grade. The LOWER the grade the less the degree of elbow dysplasia evident on the radiograph;
- (e) the grades are recorded in the Certificate of Grading section at the bottom of the certificate which is signed by both scrutineers;
- (f) each radiograph which has been graded has the initials "BVA" embossed onto it **once**. Any other radiographs which have been submitted for the same dog (but not graded) will be embossed **twice** with the BVA initials.

NB If there appear to be any inconsistencies or inaccuracies of completion or identification on the ED certificate, the submission will be returned to the veterinary surgeon with relevant comments.

* 4.1 Rejected Radiographs

If a radiograph is rejected, hard copies will be embossed twice with the initials 'BVA' and returned to the submitting veterinary surgeon with any relevant comments, whilst discs will be retained. The fee will not be refunded and the certificate will not be completed. When a subsequent radiograph is submitted for that dog, it must be accompanied by a new certificate and a further fee (see Schedule 1).

5. Results

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

- (a) the radiographs, the completed original certificate (which is gold and is to be passed to the owner) and a photocopy of the certificate (to be kept by the veterinary surgeon) are returned to the submitting veterinary surgeon along with a copy of the procedure notes;
 - (b) the names of Kennel Club registered dogs graded under the Scheme, together with the results, will be sent to the Kennel Club for publication and inclusion on the relevant documents. Details and results of dogs not registered with the Kennel Club will not be sent to the KC;
 - (c) relevant details may be sent to a geneticist for statistical analysis as arranged by BVA.
-

5.1 Requests for Results

- (a) Pending results:
 - (i) **an owner must contact the submitting veterinary surgeon, NOT BVA, for results issued under the Scheme;**
 - (ii) a veterinary surgeon may contact BVA on a client's behalf for results of grading but is asked to allow at least three weeks from the date of correct submission before doing so.
- (b) Past results:
 - (i) requests for results which have previously been published should be directed to the Kennel Club;
 - (ii) any results which have **not** been published cannot be divulged by BVA and should be sought directly from the owner(s) of the dog;

- (iii) a copy of a certificate may be issued by BVA only to the person(s) identified on the elbow dysplasia certificate as the owner(s) of the dog at the time of grading. Such requests should be made to BVA in writing and a fee will be charged (see Schedule 2).

* 6. Appeals Procedure

An owner has the right to appeal with regard to the results of an ED grade. The procedure will be as follows:

- (a) any application for appeal against the result of an ED grade must be lodged by the owner with BVA in writing **within 45 days** from the date of dispatch from BVA;
- (b) an appeal certificate (available to the submitting veterinary surgeon from BVA) must be completed in a similar way to the ED certificate and submitted together with the re-grading fee (see Schedule 1)
 - (i) For hard copies **the same radiograph used for grading** (ie the radiograph(s) embossed once with the initials "BVA") must be resubmitted by the veterinary surgeon to BVA within a reasonable period of time.
 - (ii) For digital, the original digital images are held by BVA so do not need to be resubmitted;
- (c) In the event of an appeal being lodged proof of posting will not constitute proof of receipt by BVA;
- (d) the radiograph(s) will be re-graded by the Chief Scrutineer, whose decision will be final, and the reviewed grade results will be relayed in the normal way.

(NB the first result may have already been submitted to the KC for publication before the second result is received). In any event, the final result will be sent to the Kennel Club for publication.

SCHEDULE 1

Breeds with a higher incidence of elbow dysplasia

Whilst any breed of dog may be submitted for grading under the Scheme, the breeds listed below have been recognised as having a higher incidence of elbow dysplasia. This list may be changed from time to time in light of data gathered and any change will be notified by further communication.

Basset Hound	Irish Wolfhound
Bernese Mountain Dog	Newfoundland
English Mastiff	Retriever (Golden)
German Shepherd Dog	Retriever (Labrador)
Great Dane	Rottweiler

SCHEDULE 2

Charges as at 1 January 2011

The scale of fees as at 1 January 2011 is set out below (figures in brackets include VAT). 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.

Number of dogs	BVA charge for grading per dog	
1-4 dogs	£41.67	(£50.00)
5 or more dogs (same owner)	£37.50	(£45.00)
Re-grading under the appeals Procedure	£83.34	(£100.00)
Joint Hip & Elbow	£75.00	(£90.00)

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

Copy of ED Certificate [can only be issued to the person(s) identified on the original certificate as the owner(s) of the dog at the time of grading]	£29.17	(£35.00)
---	--------	----------

In addition to cheques and postal orders, payment may also be made by credit/debit card.

SCHEDULE 3

BVA/KC Elbow Dysplasia Scheme: Panel of Scrutineers as at 1 January 2011

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

Mr B M TURNER BVSc (Massey) DVR CertSAO MRCVS (Chief Scrutineer)
Dr A ANDERSON BVetMed DSAS (Orth) MRCVS
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 MRCVS
Dr J V DAVIES BVetMed DVR MRCVS DipECVS DipECVDI
Mrs R DENNIS MA VetMB DVR MRCVS DipECVDI
Dr C GIBBS BVSc DVR MRCVS DipECVDI
Prof M E HERRTAGE MA BVSc DVSc DVR DVD DSAM MRCVS DipECVDI DipECVIM
Mr J E F HOULTON, MA VetMB DVR DSAO MRCVS DipECVS.