

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

These procedure notes are intended to explain the BVA/Kennel Club Hip Dysplasia Scheme and to provide helpful instruction to those using the Scheme. They are due to be effective from 1 January 2017 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

Hip dysplasia (HD) is a genetically-transmitted condition but environmental factors may influence the final score achieved. The score does not therefore absolutely reflect the potential for transmission of HD of an individual animal but should be regarded only as an indicator of possible transmission of the condition. For the Scheme to be meaningful and successful it is important that images from EVERY dog radiographed be submitted for scoring, whether or not the animal is required for breeding and whatever the state of the hips, in order to provide the widest possible information for use by a geneticist and for generation of estimated breeding values (EBVs). Further information about hip dysplasia and the use of the scoring 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 hips of dogs for hip 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 a radiograph for any anatomical and pathological changes indicative of hip dysplasia and a score is recorded. This score, and its relation to the breed median score, is intended to assist dog breeders in their selection of breeding stock. Breeders wishing to reduce the risk of HD should select their breeding stock (both dogs and bitches) only from animals with hip scores BELOW the breed median score. Many clinically sound dogs may have high HD scores and should not therefore be used for breeding. The 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 elbow dysplasia as well as hip dysplasia may have the hips and elbows radiographed at the same time and the submissions sent together. In such cases these procedure notes should be read in conjunction with those of the BVA/Kennel Club Elbow Dysplasia (ED) Scheme (details available from [BVA website](#)).

2. Breed specific statistics

The breed specific statistics include **the breed median (BM) for the last fifteen and five years and the rolling five year median**, which are calculated from the scoring records of each breed to give a representative overview of the HD status of the dogs scored in that breed. At the time the certificate is returned to the submitting veterinary surgeon, a copy of the current breed specific statistics will be enclosed so that the veterinary surgeon may best advise his/her client regarding the dog's suitability for breeding. The breed specific statistics are also available on the BVA and Kennel Club websites.

3. Arranging for radiography and submission to the scheme

The dog's owner should approach his or her veterinary surgeon and request that the hip 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 hips 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 hips, 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 HD 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 7).

4. Procedure for radiography of the hips

A ventrodorsal (VD) radiograph of the pelvis is required for scoring. The veterinary surgeon should radiograph the dog's hips as indicated below.

4.1 Protection of Personnel

The Guidance Notes for the Safe Use of Ionising Radiations in Veterinary Practice (1999), which are based on the Ionising Radiations Regulations 1999, 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

A standard position for radiography must be employed as follows:

- a) the dog must be placed on its back with the pelvis over the middle of the cassette or detector and the X-ray beam centred on the midline between the hips (i.e. the centring point should be at the level of the cranial edge of the pubis, by palpation). The pelvic area must lie flat on the table and not be artificially tilted.
- b) in order to avoid lateral rotation, the body should be supported in a straight line using a cradle or sandbags. The thorax must be upright and symmetrical since tilting of any part of the dog's body is likely also to cause tilting of the pelvis and asymmetry in the appearance of the hips. Lateral tilting of the pelvis can be recognised as a disparity in appearance between the ilial wings and obturator foramina on the two sides. It may be corrected by raising the pelvis slightly on the side on which the ilial wing appears wider and the obturator foramen narrower on the radiograph.
- c) the hind legs should be fully extended and adducted so that the femora lie as near parallel to each other as possible: they must not be over-adducted (i.e. they must not converge towards the stifles).
- d) the legs should be inwardly rotated so that the patellae lie centrally in the femoral trochlear grooves i.e. the stifles are upright.
- e) suitable ties or tape placed around the distal femora or stifles should be used to achieve correct adduction and inward rotation; ties must not be placed around the proximal femora, pelvis or hips and radiographs showing restraint at this level will be rejected.
- f) poor positioning which allows either lateral or longitudinal tilt of the pelvis or incorrect positioning of the femora may prevent accurate radiological assessment of the hips; such radiographs may be rejected.
- g) To obtain correct positioning, please refer to the “how to” positioning videos on the [BVA YouTube channel](#).

4.3 Markers and identification

The following information MUST be included on digital images or, in the case of radiographic film, radiographed onto the film at the time of exposure or added by light marker 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, 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 fat 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 Digital images

Digital images may be submitted as DICOM files, one dog per disc. Images may also be printed from the original DICOM file and submitted as dry laser images or on high quality photographic paper. When submitted as hard copies the image must include a millimetre scale at the time of radiography and have a size variation of no more than 10% from the actual size of the dog.

4.6 Radiographs on X-ray film

Correct processing (developing, fixing and washing) is essential to produce a diagnostic radiograph. Incorrect exposure and processing can seriously interfere with the visibility of detail and so affect the radiological assessment of the hips. Extraneous marks from screen contamination, splashes, scratches etc. should be avoided.

NB Radiographs which are not of acceptable diagnostic quality to the scrutineers will be returned to the submitting veterinary surgeon together with an explanation of the reason for the rejection, and a radiograph of appropriate quality requested.

5. Submission and scoring

The procedure for submission and scoring under the scheme is as follows:

- a) the veterinary surgeon sends the radiograph to BVA with the HD certificate, having signed the middle part (the Submitting Veterinary Surgeon's Certificate) to certify:
 - i) the details regarding the submission of the radiograph,
 - ii) the microchip 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 HD certificate i.e. 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 1) must be included with the submission and cheques must be made payable to BVA. The BVA charge includes the scrutineers' fee but does not cover the cost of radiography;

- c) scrutineers, appointed by BVA, meet frequently to score the radiographs. Two scrutineers agree the score for each radiograph;
- d) for each hip joint a score is derived by evaluation of nine separate features by employing a set of defined criteria. The final score is the sum of the points awarded for each of the nine radiographic features of both hip joints. The minimum score for each hip is 0 and the maximum is 53, which gives a total range of 0-106. The LOWER the score the less the degree of hip dysplasia evident;
- e) the score is recorded in the Certificate of Scoring section at the bottom of the certificate which is signed by both scrutineers;
- f) for hard copies, the radiograph which has been scored has the initials "BVA" embossed onto it once. Any other radiographs which have been submitted for the same dog (i.e. not scored) will be embossed twice with the BVA initials.

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

5.1 Reject 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 of digital images 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).

6. Results

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

- a) the radiograph (when submitted on film), the completed original certificate (which is green 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 veterinary surgeon along with a copy of the procedure notes and the breed specific statistics sheet;
- b) the names of Kennel Club registered dogs scored under the scheme, together with the results of the HD score, will be sent to the Kennel Club for publication and inclusion on the relevant documents.
- c) relevant details may be sent to a geneticist for statistical analysis or creation of EBVs as arranged by BVA.

6.1 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 scoring but is asked to allow at least three weeks from the date of correct submission before doing so.
- 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;
- iii) a copy of a certificate may be issued by BVA only to the person(s) identified on the HD certificate as the owner(s) of the dog at the time of scoring. Such requests should be made to BVA in writing and a fee will be charged (see Schedule 1).

7. 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 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 HD certificate and submitted together with the re-scoring fee (see Schedule 1) and the original certificate against which the appeal is being made.
 - i) for digital radiographs, the original digital images are held by BVA so do not need to be resubmitted;
 - ii) for hard copies the same radiograph used for scoring (i.e. the radiograph embossed once with the initials “BVA”) must be resubmitted by the veterinary surgeon to BVA within a reasonable period of time.
- c) In the event of an appeal being lodged proof of posting will not constitute proof of receipt by BVA
- d) The radiograph will be re-scored by a further pair of scrutineers and then by the Chief Scrutineer, whose decision will be final, and the new score results will be relayed in the normal way. The original certificate against which the appeal was made will be retained by the BVA. N.B. the first result may have already been submitted to the KC for publication before the second result is received but in this case will be replaced by the final result

Schedule 1

Charges as at 1 January 2018

The scale of fees as at 1 January 2018 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 Hip Dysplasia Scheme: Panel of Scrutineers as at 1 January 2018

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 DVR MRCVS DipECVS DipECVDI (Chief Scrutineer)

Dr A ANDERSON BVetMed 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 FRCVS

Dr R DENNIS MA VetMB DVR FRCVS DipECVDI

Dr C GIBBS BVSc DVR FRCVS DipECVDI

Prof M E HERRTAGE MA BVSc DVSc DVR DVD DSAM FRCVS DipECVDI Dip ECVIM

Mr J E F HOULTON, MA VetMB DVR DSAO MRCVS DipECVS

Mr B M TURNER BVSc (Massey) DVR CertSAO MRCV