



NZVA
New Zealand Veterinary Association

Standard Operating Procedure

Submission of Radiographs to the New Zealand Veterinary Association Elbow Dysplasia Scheme

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Policy

The NZVA recommends that dogs of those breeds susceptible to hip and elbow dysplasia are assessed radiographically for abnormalities so that breeders can distinguish affected from non-affected dogs in order to reduce the incidence of these heritable conditions.

Background

The NZVA Hip and Elbow dysplasia schemes, which have been in existence for many years, became joint New Zealand Veterinary Association/New Zealand Kennel Club schemes in 2002.

In January 2014, the NZVA decided to stop offering the Hip dysplasia scheme in favour of supporting the distraction radiographic technique known as PennHIP. The national network of veterinarians trained in the PennHip technique was considered extensive enough to be able to effectively offer this alternative by this date. The NZVA supported this change because:

- It recognises the published data indicating the validity of distraction radiography at determining hip laxity and its greater predictive value than hip-extended radiography.
- It recognises that there is growing evidence of higher heritability of the PennHIP distraction index in comparison to the NZVA Hip dysplasia (HD) score, and that breeders should be encouraged to use the former when Canine HD (CHD) is a significant issue for a breed and the best selection tool is required.

Further information on the PennHip scheme and a list of PennHip trained veterinarians in New Zealand can be found at <http://info.antechimagingsservices.com/pennhip/>

The NZVA/NZKC Elbow dysplasia (ED) scheme continued unchanged from January 2014. Progress with this scheme has been more productive than with the HD scheme, and there is no evidence of a significantly more effective alternative at this stage, though progress will continue to be assessed, and alternatives considered on their scientific merit.

Although the NZVA/NZKC scheme is based on other international reputable and robust schemes designed to identify affected dogs, progress in reducing the conditions from susceptible breeds has been slow.

New initiatives to lower the incidence of ED include the requirement for compulsory permanent identification. Owners of dogs for scoring are required to have the dog microchipped and register the

microchip number with the NZKC at registration. Veterinarians are required to positively identify dogs presented for scoring by scanning the microchip and verifying the number versus the registration papers supplied by the owner. The microchip number must be recorded on both the radiographs (as a permanent part of the film emulsion or DICOM data) and the certificate for scoring.

Guidelines

1. Veterinarians submitting radiographs from clients' dogs to the NZVA/NZKC Elbow dysplasia scheme must abide by the rules of the scheme. It is recommended that veterinarians inform breeders of the scheme policies prior to the dog being radiographed.
2. Veterinarians should advise clients requesting scoring for elbow dysplasia under the NZVA/NZKC scheme that the resulting radiographs must be submitted for evaluation, irrespective of any abnormality present.
3. Veterinarians taking radiographs for scoring for hip or elbow dysplasia are advised not to pass an opinion on the quality of the joints before submitting the radiographs for evaluation.
4. It is now a requirement that veterinarians submitting radiographs for evaluation in the ED scheme must verify the identity of the animal by scanning and confirming the animal's microchip number against the pedigree/ownership papers. This number must now be included on the labels and radiographs.
5. Veterinarians should take the opportunity to educate dog breeders about the value of the dysplasia schemes and the benefits to dogs and breeders of reducing the incidence of joint dysplasia.
6. The radiographs will remain the property of the submitting veterinary practice. Data will be used in the evaluation of individual dogs and breeds.

Submission of Digital Radiographs

1. Quality – The current standard – “that the radiographs be of sufficient diagnostic standard” applies to both analogue and digital submissions. The scorers will be the final arbiters of quality and will be able to reject digital files on the same basis as they would poor quality standard films. For elbows this is the sharpness and exposure of the image and the ability to assess the detail on the non-articular border of the anconeal process. The elbow needs to be adequately flexed and the humeral condyles must be aligned (not obliquely projected).
2. Permanent identification – The images must comply with existing or future requirements for permanent and unalterable identification of the patient on the original image file. This would include as a minimum the date of radiography, Kennel Club number and registered name of the

dog, and the microchip number, and the practice name. The relevant patient information must EITHER be included as an annotation on the standard DICOM image or an X-rite label that can still be imaged in the x-ray as it would be for film screen.

3. Sizing - Scoring digital images raises some unique challenges. Digital images are scaled by the software to the viewer and do not necessarily replicate life-size. Size and left/right lateral markers need to be placed next to the patient, to allow “life-size adjustment” and embedded discrimination of side. This is important because the elbow system uses 0-2mm, 2-5mm and >5mm height of osteophytosis as the criteria for grading. The scoring system has to be equable for film and digital submission. Veterinarians shall use a 3cm commercial radiopaque marker placed at the same height as the femur or radius. This allows the digital image to be scaled for viewing. It is important that a L/R marker is still used to ensure no doubt exists in the final image. With digital it is possible to use the wrong protocol selecting VD vs DV on the protocol) such that transposition of the inbuilt laterality markers occurs. The NZVA scheme requires elimination of this doubt.
4. Submission and stick-on labels - NZVA accept digital submissions on compact disc only accompanied by the existing form. The files are too large for e-mail transfer (see data file format below). Note a CD is preferable to a DVD.
 - a. The veterinarian shall label the CD cover with an NZVA stick-on label. The information on the NZVA label should also be written in indelible pen on the disc itself. Do not affix a stick-on label to the CD itself as this can result in jamming of the disc in a computer drive.
 - b. Digital submissions will be viewed electronically unless they cannot be opened and viewed using either *E-Film* or *Clearcanvas*. If the scorers cannot view the images, the elbow submissions will be printed onto film at the Massey University Veterinary Teaching Hospital (at a cost of \$15 to the veterinarian, \$10 of which is rebated to Massey, the rest covers additional handling). The submitting veterinarian shall provide a completed NZVA ED label for later attachment to the printed image (one per elbow).
5. Data file format – MUST BE DICOM. Most digital systems can save images in several formats. Although some are conveniently sized for email, such as JPEG, they will compress information and are not suitable for diagnostic quality imaging. DICOM (digital imaging and communications in medicine) format is universally accepted as the image viewing software of choice. Practices submitting images digitally must save them to CD in DICOM 3.0 or higher. There should be only one dog per CD.