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# Orthopedic Foundation for Animals

2300 E Nifong Blvd, Columbia, MO 65201  
 Phone (573) 442-0418; Fax (573) 875-5073  
 email: ofa@ofa.org | website: www.ofa.org  
 A Not-for-Profit Organization

<b>Office Use Only</b>
v010122

## Application for Basic Cardiac Database

Registered name:		AKC registration number:		Other registry name:	
				Other registry #:	
Breed:		Sex:		Date of birth (MM/DD/YY):	
Microchip/tattoo:		Registration number of sire:		Registration number of dam:	
Owner name:		Co-Owner name:		Examining veterinary clinic:	
				Date of evaluation (MM/DD/YY):	
Mailing address:			Mailing address:		
City:		State:	Zip/postal code:		
Phone:		E-mail:		Phone:	
				E-mail:	

I hereby certify that the animal examined is the animal described on this application. I understand that by submitting these results to the OFA, if the animal was 12 months or older at the time of the exam, the results will be released to the public. Exams on animals under 12 months of age are considered preliminary, are not eligible for OFA certification numbers, and the results will not be released to the public.

Signature of owner or authorized representative \_\_\_\_\_

### Veterinary Exam Results

Clinical findings based on cardiac auscultation is required. (see page 2)

AUSCULTATION (REQUIRED)					
Normal	<input type="checkbox"/>	Abnormal	<input type="checkbox"/>	Arrhythmia	<input type="checkbox"/>
Murmur Grade:	I <input type="checkbox"/>	II <input type="checkbox"/>	III <input type="checkbox"/>	IV <input type="checkbox"/>	V <input type="checkbox"/>
	VI <input type="checkbox"/>				
PMI:	Left <input type="checkbox"/>	Right <input type="checkbox"/>	Base <input type="checkbox"/>	Apex <input type="checkbox"/>	
Timing:	Systolic <input type="checkbox"/>	Diastolic <input type="checkbox"/>	Continuous <input type="checkbox"/>		
Extra Sounds:	Click <input type="checkbox"/>	Gallop <input type="checkbox"/>	Split S1 <input type="checkbox"/>	Split S2 <input type="checkbox"/>	

#### Summary evaluation and opinion of the examiner:

- Normal cardiovascular examination—heart disease is not evident
- Equivocal cardiovascular examination—heart disease cannot be diagnosed nor excluded; status uncertain for breeding.
- Abnormal cardiovascular examination indicative of heart disease; indicate suspected diagnosis below:

\_\_\_\_\_

\_\_\_\_\_

- I certify that the standards for cardiac examination as set forth by the OFA were carefully followed in performing this examination.
- I DID** verify microchip/tattoo on this dog       **I DID NOT** verify microchip/tattoo on this dog

**Veterinarian Signature**      Check one box:     Practitioner,     Specialist,     Cardiologist      Date \_\_\_\_\_

**Fees**      Animals Over 12 Months ..... \$15.00      **Kennel Rate**—Individuals submitted as a group, owned/co-owned by same person.  
 Litter of 3 or more submitted together ..... \$30.00      Minimum of 5 individuals ..... \$10.00 each

Exams on animals under 12 months of age are considered preliminary evaluations and are not eligible for OFA numbers

Payments can be made by Visa, Mastercard, check or money order (U.S. funds drawn on a U.S. bank) payable to the Orthopedic Foundation for Animals.

Card number \_\_\_\_\_      Cardholder name \_\_\_\_\_      Exp date MM/YY \_\_\_\_\_      CVV \_\_\_\_\_

Submit thru <https://online.ofa.org> - OR - provide payment details here if mailing or emailing

## Methods of Examination

### Clinical Examination

#### 1. The clinical cardiac examination should be conducted in a systematic manner.

The arterial and venous pulses, mucous membranes, and precordium should be evaluated. Heart rate should be obtained. The clinical examination should be performed by an individual with advanced training in cardiac diagnosis. Board certification by the American College of Veterinary Internal Medicine, Specialty of Cardiology is considered by the American Veterinary Medical Association as the benchmark of clinical proficiency for veterinarians in clinical cardiology, and examination by a Diplomate of this specialty board is recommended. However, any licensed veterinarian may be able to perform this examination by auscultation.

#### 2. Cardiac auscultation should be performed in a quiet, distraction-free environment.

The animal should be standing and restrained, but sedative drugs should be avoided. Panting must be controlled, and if necessary, the dog should be given time to rest and acclimate to the environment. The clinician should be able to identify the cardiac valve areas for auscultation. The examiner should gradually move the stethoscope across all valve areas and also should auscultate over the subaortic area, ascending aorta, pulmonary artery, and the left craniodorsal cardiac base. Following examination of the left precordium, the right precordium should be examined.

- The mitral valve area is located over and immediately dorsal to the palpable left apical impulse and is identified by palpation with the tips of the fingers. The stethoscope is then placed over the mitral area and the heart sounds identified.
- The aortic valve area is dorsal and 1 or 2 intercostal spaces cranial to the left apical impulse. The second heart sound will become most intense when the stethoscope is centered over the aortic valve area. Murmurs originating from or radiating to the subaortic area of auscultation are evident immediately caudoventral to the aortic valve area. Murmurs originating from or radiating into the ascending aorta will be evident craniodorsal to the aortic valve and may also project to the right cranial thorax and to the carotid arteries in the neck.
- The pulmonic valve area is ventral and one intercostal space cranial to the aortic valve area. Murmurs originating from or radiating into the main pulmonary artery will be evident dorsal to the pulmonic valve over the left hemithorax.
- The tricuspid valve area is a relatively large area located on the right hemithorax, opposite and slightly cranial to the mitral valve area.
- The clinician should also auscultate along the ventral right precordium (right sternal border) and over the right craniodorsal cardiac border.
- Any cardiac murmurs or abnormal sounds should be noted. Murmurs should be described as indicated below.

#### 3. Description of cardiac murmurs—A full description of the cardiac murmur should be made and recorded in the medical record.

- Murmurs should be designated as systolic, diastolic, or continuous.
- The point of maximal murmur intensity should be indicated as described above. When a precordial thrill is palpable, the murmur will generally be most intense over this vibration.
- Murmurs that are only detected intermittently or are variable should be so indicated.
- The radiation of the murmur should be indicated.
- Grading of heart murmurs is as follows:

Grade 1—a very soft murmur only detected after very careful auscultation

Grade 2—a soft murmur that is readily evident

Grade 3—a moderately intense murmur not associated with a palpable precordial thrill (vibration)

Grade 4—a loud murmur; a palpable precordial thrill is not present or is intermittent

Grade 5—a loud cardiac murmur associated with a palpable precordial thrill and not audible when the stethoscope is lifted from the thoracic wall

Grade 6—a loud cardiac murmur associated with a palpable precordial thrill and audible even when the stethoscope is lifted from the thoracic wall

- Other descriptive terms may be indicated at the discretion of the examiner; these include such timing descriptors as: proto(early)-systolic, ejection or crescendo-decrescendo, holo-systolic or pan-systolic, decrescendo, and tele(late)-systolic and descriptions of subjective characteristics such as: musical, vibratory, harsh, and machinery.

#### 4. Effects of heart rate, heart rhythm, and exercise.

- Some heart murmurs become evident or louder with changes in autonomic activity, heart rate, or cardiac cycle length. Such changes may be induced by exercise or other stresses. The importance of evaluating heart murmurs after exercise is currently unresolved. It appears that some dogs with congenital subaortic stenosis or with dynamic outflow tract obstruction may have murmurs that only become evident with increased sympathetic activity or after prolonged cardiac filling periods during marked sinus arrhythmia. It also should be noted that some normal, innocent heart murmurs may increase in intensity after exercise. Furthermore, panting artifact may be a problem after exercise.
- It is most likely that examining dogs after exercise will result in increased sensitivity to diagnosis of soft murmurs but probably decreased specificity as well. Auscultation of the heart following exercise is at the discretion of the examining veterinarian.
- At this time the OFA does not require a post exercise examination in the assessment of heart murmurs in dogs; however, this practice may be modified should definitive information become available.

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 Phone (573) 442-0418 | Fax (573) 875-5073 or (573) 443-7544  
 Office Email: ofa@offa.org | Website: www.ofa.org  
**Email for Submissions: applications@offa.org**

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## Application for Hip/Elbow Dysplasia Database

Registered name:			AKC registration number:		Other registration # (if any)	
Breed:		Sex:	Date of birth (MM/DD/YY):		Date radiograph taken (MM/DD/YY):	
Microchip/tattoo:			Registration number of sire:		Registration number of dam:	
Owner name:			Examining veterinary clinic:			
Co-owner name:						
Mailing address:			Mailing address:			
City:		State:	Zip/postal code:		City:	State:
Phone:		State:	Zip/postal code:		Phone:	Fax:
Phone:			Veterinarian e-mail:			

Owner e-mail.

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I hereby request the OFA to provide a hip and/or elbow evaluation of the animal described on this application. I certify that the image submitted is of this animal and that neither the pelvic nor the elbow conformation have been surgically altered. I understand that the image submitted will be retained by the OFA, understand that the image is submitted for a consensus evaluation based on the independent, professional judgment of consulting board-certified veterinary radiologists, and I hereby release the OFA from any and all liability resulting from the consensus evaluation. I understand the OFA will release all normal hip and/or elbow results for animals over 24 months to the public, and by submitting this application I agree the OFA may do so. Normal hip results are defined as a consensus evaluations of Excellent, Good, or Fair and normal elbow results are defined as consensus evaluations of Normal. Abnormal hip and/or elbow results (including borderline results) will not be released to the public unless the initials of a registered owner or authorized representative appear in the box below. **Results for Animals under 24 months will only be released and published if all criteria described on page 2 of this application have been met.** By submitting this hip and/or elbow application I agree to the associated current OFA evaluation fees and understand that no results will be released or reported until all related charges are paid in full.

Signature of owner or authorized representative \_\_\_\_\_

**Authorization to Release Abnormal Results**

I hereby authorize the OFA to release the results of its evaluation of the animal described on this application to the public if the results are abnormal \_\_\_\_\_ (initials of registered owner or authorized representative).

**Veterinary Information**

This animal was restrained using:  Physical restraint only  Chemical restraint

I DID verify the microchip/tattoo information on this dog  I DID NOT verify the microchip/tattoo information on this dog

*Only dogs with Verified Permanent Identification (VPI) will have their results transmitted to the AKC for inclusion in their registration and pedigree documents*

**Veterinarian Signature** \_\_\_\_\_

**Fees**

<b>Animals Over 24 Months</b>		<b>Animals Under 24 Months</b>	
• Hip evaluation.....	.....\$45.00	• Preliminary hip evaluation.....	.....\$35.00
• Elbow evaluation.....	.....\$45.00	• Preliminary elbow evaluation.....	.....\$35.00
• Hip and elbow evaluations submitted together.....	.....\$50.00	• Preliminary hip and elbow evaluations submitted together.....	.....\$40.00
• Litter of 3 or more submitted together.....	.....\$120.00	• Litter of 3 or more submitted together.....	.....\$100.00

**Kennel Rate**—Individuals submitted as a group, owned/co-owned by same person, < or > 24 months

- Minimum of 5 individuals.....\$25 per study

**See instructions on page 2**

Payments can be made by Visa, Mastercard, check or money order (U.S. funds drawn on a U.S. bank) payable to the Orthopedic Foundation for Animals.

Party responsible for payment is:  Veterinarian  Owner/co-owner  Other **Card type:**  Visa  MasterCard

Card number \_\_\_\_\_ Cardholder name \_\_\_\_\_ Exp date MM/YY \_\_\_\_\_ CV \_\_\_\_\_

# Instructions for Taking Images for OFA Dysplasia Evaluations

## Images should be permanently identified with:

1. Registered name and/or number
2. Name of veterinary clinic making the film
3. Date the image was taken

## OFA Database

The dysplasia control database of the OFA is a voluntary program established to evaluate images and to identify films showing no evidence of dysplasia or other orthopedic problems. All images submitted that are of acceptable diagnostic quality will be reviewed by qualified veterinary radiologists and a consensus report will be returned to the owner of record and referring veterinarian. Only animals that are 24 months of age or older to the day at the time of radiography, with no radiographic evidence of dysplasia, will be assigned a breed OFA number. The OFA does offer a preliminary evaluation for those between 4 months and 23 months of age.

## Age Requirement

Only dogs that are 24 months of age, to the day, or older at the time of radiography can qualify for an OFA hip number. In general hip joint status of younger dogs will be evaluated but only a consultation report will be issued. Dogs must be at least 4 months of age for a preliminary evaluation. For toy and small breeds interested in the Legg-Calve-Perthes Database the animal has to be 12 months of age or older. The dog's registration certificate or copy of this information should be available at the time of radiography.

## OFA Policy Regarding Release of Preliminary Results (Animals Under 24 Months)

the OFA will post preliminary results if:

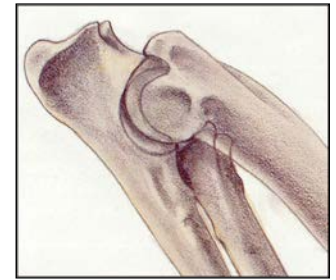
- The animal is at least 12 months at the time of radiography
- The animal must be permanently identified via microchip or tattoo
- The owner initials the authorization block to release all results (including abnormal results) when the application is initially submitted

## Restraint

Obtaining proper position often requires chemical restraint. The OFA recommends chemical restraint to the point of muscular relaxation. The type of agent used (sedative, tranquilizer, or general anesthesia) is best determined by the attending veterinarian.

## Positioning

Dorsal recumbency with the rear legs **extended and parallel** to each other is the preferred positioning. This standard ventrodorsal view is the basis for evaluation of hip joint status with respect to hip dysplasia. Care should be exercised to be sure the pelvis is not tilted. Elbow joints are evaluated in the fully flexed medial to lateral position, additional views are optional.



## Digital Submission

Veterinary clinics can register to submit digital images and find detailed directions on how to submit images digitally at [www.ofa.org/veterinarian/veterinary-submissions](http://www.ofa.org/veterinarian/veterinary-submissions)

## Image Identification

Permanent identification of the dog on the image is required to be eligible for OFA evaluation. Lead letters, an I.D. camera, or radio opaque tapes can be used to identify the film. Digital images should have embedded text with the hospital or veterinarian's name, date taken, registered name and/or registration number. OFA does not accept images that need to be accessed through cloud/web-based links or zip files, images should be attachments and should not require proprietary viewing software.

## Exposure

Good contrast is desirable (high mAs, low kVp). Grid techniques are recommended for all large dogs.

## Radiation Safety

Proper collimation and protection of attendants is the responsibility of the veterinarian. Gonadal shielding is recommended for male dogs.

## Hormonal Effect

Some female dogs show subluxation when radiographed around an estrus cycle which is not apparent when re-radiographed in anestrus. The OFA recommends radiographing 3-4 weeks before or after a heat period or 3-4 weeks after weaning a litter of pups.

## Application for OFA Film Evaluation

The owner or agent must complete and sign the OFA application form. If available, please attach a copy of the dog's registration papers. Application forms are available on request from the OFA and from the OFA website at [www.ofa.org](http://www.ofa.org). The **image, signed form, and service fee** should be mailed together to the Orthopedic Foundation for Animals at the address on the front of this form.

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## Application for Legg-Calve-Perthes Database

Registered name:			AKC registration number:			Other registry name:		
Breed:			Sex:			Date of birth (MM/DD/YY):		
Microchip/tattoo:			Registration number of sire:			Registration number of dam:		
Owner name:			Date of examination (MM/DD/YY):					
Co-owner name:			Examining veterinary clinic:					
Mailing address:			Mailing address:					
City:		State:	Zip/postal code:		City:		State:	Zip/postal code:
Phone:		E-mail:		Phone:		E-mail:		

I hereby certify that the radiograph submitted is of the animal described on this application and that the pelvic conformation has not been surgically altered. I am aware that the radiographic image will be retained for the records of the Orthopedic Foundation for Animals, Inc. I understand the evaluation is based upon the independent, professional judgment of consulting radiologists, and I hereby release the OFA from any and all liability resulting from the evaluation. I understand that only normal results will be released to the public unless the initials of a registered owner appear in the authorization box below which permits the OFA to release abnormal results to the public.

Signature of owner or authorized representative \_\_\_\_\_

<p><b>Authorization to Release Abnormal Results</b>          I hereby authorize the OFA to release the results of its radiographic evaluation of the animal described on this application to the public if the results are abnormal _____ (initials of registered owner or authorized representative).</p>
--

### Instructions

Radiographs should be permanently identified in the film emulsion with:

1. Registered name and/or number
2. Name of veterinarian or hospital making the film
3. Date of radiograph taken

Pelvic evaluation is based on the standard VD view with good pelvic definition, pelvis not tilted and femurs extended and parallel

### Veterinary Information

This animal was restrained using:

- Physical restraint only
- Chemical restraint

### Check the next page for breeds at risk for Legg-Calve-Perthes

<input type="checkbox"/> I DID verify microchip/tattoo on this dog	<input type="checkbox"/> I DID NOT verify microchip/tattoo on this dog
_____ <b>Veterinarian Signature</b> Specialty: <input type="checkbox"/> Practitioner, <input type="checkbox"/> Specialist      Date	

- |             |   |  |
|-------------|---|--|
| <b>Fees</b> | • Legg Calve Perthes Database ..... \$35.00             | <b>Kennel Rate</b> —Applications submitted as a group, owned/co-owned by same person |
|             | • Litter of 3 or more submitted together ..... \$100.00 | • Minimum of 5 individuals ..... \$25.00 per study                                   |

When submitting radiographs for both OFA hip and LCP evaluations, only the regular OFA hip fee applies, the LCP fee is waived.

Payments can be made by Visa, Mastercard, check or money order (U.S. funds drawn on a U.S. bank) payable to the Orthopedic Foundation for Animals.

Card number \_\_\_\_\_ Cardholder name \_\_\_\_\_ Exp MM/YY \_\_\_\_\_ CVV \_\_\_\_\_

## OFA Database

The dysplasia control database of the OFA is a voluntary program established to evaluate radiographs and to identify films showing no radiographic evidence of dysplasia or other orthopedic problems. All films submitted that are of acceptable diagnostic quality will be reviewed by a qualified veterinary radiologist and a report will be returned to the owner of record and referring veterinarian. Only animals that are 12 months of age or older to the day at the time of radiography, with no radiographic evidence of Legg-Calve-Perthes or dysplasia, will be assigned a breed Legg-Calve-Perthes number.

### Instructions for Taking Films for OFA Evaluations

#### Age Requirement

For toy and small breeds interested in the Legg-Calve-Perthes Database the animal has to be 12 months of age or older. The dog's registration certificate or copy of this information should be available at the time of radiography.

#### Restraint

Obtaining proper film position often requires chemical restraint. The OFA recommends chemical restraint to the point of muscular relaxation. The type of agent used (sedative, tranquilizer, or general anesthesia) is best determined by the attending veterinarian.

#### Positioning

Dorsal recumbency with the rear legs **extended and parallel** to each other is the preferred positioning. This standard ventrodorsal view is the basis for evaluation of hip joint status with respect to hip dysplasia. Care should be exercised to be sure the pelvis is not tilted. Elbow joints are evaluated in the fully flexed medial to lateral position.

#### Digital Submission

Veterinary clinics can register to submit digital images and find detailed directions on how to submit images digitally at [www.ofa.org/veterinarian/veterinary-submissions](http://www.ofa.org/veterinarian/veterinary-submissions)

#### Image Identification

Permanent film identification of the dog on the image is required for radiographs to be eligible for OFA evaluation. Lead letters, an I.D. camera, or radio opaque tapes can be used to identify film. Digital images should have embedded text with the hospital or veterinarian's name, date taken, registered name and/or registration number. OFA does not accept cloud/web-based links or zip files, images should be attachments and should not require proprietary viewing software.

If the required ID information is illegible or missing, the OFA cannot accept the film for evaluation purposes. The radiographs should be labeled right or left side for hip studies and right or left elbow for elbow studies.



#### Exposure

Good contrast is desirable (high mAs, low kVp). Grid techniques are recommended for all large dogs.

#### Radiation Safety

Proper collimation and protection of attendants is the responsibility of the veterinarian. Gonadal shielding is recommended for male dogs.

#### Hormonal Effect

Some female dogs show subluxation when radiographed around an estrus cycle which is not apparent when re-radiographed in anestrus. The OFA recommends radiographing 3-4 weeks before or after a heat period or 3-5 weeks after weaning a litter of pups.

#### Application for OFA Film Evaluation

The owner or agent must complete and sign the OFA application form. This information is best obtained directly from the dog's certificate of registration and **it is recommended that a copy of the registration be included** with the submission. Application forms are available on request from the OFA and from the OFA website at [www.offa.org](http://www.offa.org). The **radiograph, signed form, and ser-vice fee** should be mailed together to the Orthopedic Foundation for Animals at the address on the front of this form.

### Breeds at Risk for Legg-Calve-Perthes

Affenpinscher	Fox Terrier	Pug
Australian Terrier	Jack Russell Terrier	Schipperke
Bichon Frise	Lakeland Terrier	Scottish Terrier
Border Terrier	Manchester Terrier	Shetland Sheepdog
Boston Terrier	Miniature Schnauzer	Silky Terrier
Cairn Terrier	Miniature Pinscher	Welsh Terrier
Chihuahua	Pomeranian	West Highland White Terrier
Cocker Spaniel	Pekingese	Yorkshire Terrier
Dachshund	Poodle	

Sources: *Control of Canine Genetic Diseases*, Howell Book House, George A. Padgett, DVM; *The Genetic Connection*, AAHA Press, Lowell Ackerman, DVM, PhD, Dipl. ACVD

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## Application for Patellar Luxation Database

Registered name:			AKC registration number:			Other registry name:			
						Other registry #:			
Breed:			Sex:			Date of birth (MM/DD/YY):			
Microchip/tattoo:			Registration number of sire:			Registration number of dam:			
Owner name:			Date of evaluation (MM/DD/YY):						
Co-owner name:			Examining veterinary clinic:						
Mailing address:			Mailing address:						
City:		State:	Zip/postal code:		City:		State:	Zip/postal code:	
Phone:		E-mail:			Phone:		E-mail:		

I hereby certify that the information submitted is of the animal described on this application. I understand that by submitting these results to the OFA, if the animal was 12 months or older at the time of the exam, the results will be released to the public. Exams on animals under 12 months of age are considered preliminary, are not eligible for OFA certification numbers, and the results will not be released to the public.

**Signature of owner or authorized representative**

### Patellar Examination Results

#### 1. Normal

normal right     normal left

#### 2. Patellar Luxation

bilateral     right     left  
 unilateral:     medial     lateral  
 luxated:     intermittent     permanent  
**luxation is:**     < 2 months     2-6 months  
**age of onset:**     6-12 months     > 12 months

#### 3. Classification of luxation

**Grade 1**—The patella easily luxates manually at full extension of the stifle joint, but returns to the trochlea when released.  
 **Grade 2**—There is frequent patellar luxation which, in some cases, becomes more or less permanent.  
 **Grade 3**—The patella is permanently luxated with torsion of the tibia and deviation of the tibial crest of between 30 degrees and 50 degrees from the cranial/caudal plane.  
 **Grade 4**—The tibia is medially twisted and the tibial crest may show further deviation medially with the result that it lies 50 degrees to 90 degrees from the cranial/caudal plane.

I certify that the examination was performed according to the OFA procedure.  
 **I DID** verify microchip/tattoo on this dog     **I DID NOT** verify microchip/tattoo on this dog

---

**Veterinarian Signature** \_\_\_\_\_ Specialty:  Practitioner     Specialist    Date \_\_\_\_\_

**Fees**    Animals over 12 months.....\$15.00 each  
           A litter of 3 or more submitted together ..... \$30.00 total  
**Kennel rate:**  
 Individuals submitted as a group, owned/co-owned by the same person  
 Minimum of 5 individuals ..... \$10.00 each

*Exams on animals under 12 months of age are considered preliminary evaluations and are not eligible for OFA numbers*

*Payments can be made by Visa, Mastercard, check or money order (U.S. funds drawn on a U.S. bank) payable to the Orthopedic Foundation for Animals.*

Card number \_\_\_\_\_ Exp MM/YY \_\_\_\_\_ CV \_\_\_\_\_

# Classification

A method of classifying the degree of luxation and bony deformity is useful for diagnosis, and can be applied to either medial or lateral luxations by reversing the medial-lateral directional references. The position of the patella can most easily be palpated by starting at the tibial tubercle and working proximally along the patellar ligament to the patella.

## Grade 1

**The patella easily luxates manually at full extension of the stifle joint, but returns to the trochlea when released.** No crepitation is apparent. The medial, or very occasionally, lateral deviation of the tibial crest (with lateral luxation of the patella) is only minimal, and there is very slight rotation of the tibia. Flexion and extension of the stifle joint is in a straight line with no abduction of the hock.

## Grade 2

**There is frequent patellar luxation which, in some cases, becomes more or less permanent.** The limb is sometimes carried, although weight bearing routinely occurs with the stifle remaining slightly flexed.

As much as 30 degrees of medial tibial torsion and a slight medial deviation of the tibial crest may exist. When the patella is resting medially the hock is slightly abducted. If the condition is bilateral, more weight is thrown onto the forelimbs.

Many cases in this grade live with the condition reasonably well for many years, but the constant luxation of the patella over the medial lip of the trochlea causes erosion of the articulating surface of the patella and also the proximal area of the medial lip. This results in crepitation becoming apparent when the patella is luxated manually.

## Grade 3

**The patella is permanently luxated with torsion of the tibia and deviation of the tibial crest of between 30 degrees and 50 degrees from the cranial/caudal plane.** Although the luxation is not intermittent, many animals use the limb with the stifle held in a semi-flexed position. Flexion and extension of the joint causes abduction and adduction of the hock. The trochlea is very shallow or even flattened.

## Grade 4

**The tibia is medially twisted and the tibial crest may show further deviation medially with the result that it lies 50 degrees to 90 degrees from the cranial/caudal plane.**

The patella is permanently luxated. The patella lies just above the medial condyle and a space can be palpated between the patellar ligament and the distal end of the femur. The trochlea is absent or even convex.

The limb is carried, or the animal moves in a crouched position, with the limb partly flexed.



## Veterinary Instructions for Submission

1. The veterinarian or owner must obtain the "Application for Thyroid Database" from the Orthopedic Foundation for Animals, Inc. (phone 573-442-0418), or online at [www.offa.org](http://www.offa.org).
2. The veterinarian and owner must complete their respective portions of the form.
3. Two milliliters (2 ml) of serum are needed for testing, and the serum sample must be from freshly collected blood. Use a plain "red-top" tube for blood collection. Do not use a serum separator tube with clot additives or any other type of plasma collection tube. After collection, place the blood sample in the refrigerator for 60 to 90 minutes to allow clotting. Centrifuge, collect the serum, and transfer to a plain plastic or glass tube suitable for shipping. Clearly label the sample with the owner's name, animal's identification, date of blood collection, and "OFA Thyroid Panel." If the specimen is to be stored for more than 12 hours prior to shipping, frozen storage is recommended.
4. Ship to the approved laboratory of choice via an overnight courier service. It is recommended that all specimens be pack-aged properly and shipped so they are received either chilled or frozen. Serum samples arriving unchilled or at room temperature within 48 hours of the collection date will be accepted. However, samples arriving after this time must be stored either chilled or frozen and arrive at the lab at room temperature or less. Contact the laboratory for further information as necessary.
5. Female dogs should not be tested during an estrus cycle. The date of last routine vaccination should be noted.
6. Please do not submit whole blood, clotted blood, or plasma.
7. Severely lipemic or hemolyzed specimens are also unacceptable.
8. Note the date of last routine vaccination on the application.
9. Test results will be mailed, emailed or faxed only to the submitting veterinarian and the Orthopedic Foundation for Animals, Inc.. Results will not be available from the laboratory by telephone. The OFA will send a report to the owner.

## Thyroid Labs

**The approved laboratory must be contacted for the appropriate submission forms, sample handling procedures, and laboratory service fee before collecting the sample.** Currently, samples may be submitted to:

**Animal Health Diagnostic Center (AHDC)**, Endocrinology Laboratory, Cornell University, 240 Farrier Rd., Ithaca, NY 14853, (607) 253-3673

**Animal Health Laboratory**, Laboratory Services Division, University of Guelph, Specimen Reception, 419 Gordon St., NW Corner Gordon/McGilvray St, Guelph, Ontario, N1G 2W1, CANADA (519) 824-4120 X54530, Fax (519) 827-0961

**Antech Diagnostics**, 1111 Marcus Ave., Suite M28, Lake Success, NY 11042, 1-800-872-1001. (Only the Lake Success, NY location of Antech has been certified to process OFA thyroid panels.)

**Michigan State University Veterinary Diagnostic Laboratory** 4125 Beaumont Road Room 122, Lansing, MI 48910, (517) 353-1683, Fax (517) 353-5096

**IDEXX**, 1345 Denison Street, Markham, Ont L3R 5V2, CANADA, 1-800-667-3411

**Texas A&M Veterinary Medical Diagnostic Laboratory**, 483 Agronomy Rd, College Station, TX 77840, (979) 845-3414

**Note:** Please contact the laboratory for information about sample collection and submission. Include OFA form and fee with submission and the lab will forward results to OFA.

### Indices of thyroiditis:

- a. Free T4 (FT4)—this procedure is considered to be the "gold standard" for assessment of the thyroid's production and cellular availability of thyroxine. FT4 concentration is expected to be decreased in dogs with thyroid dysfunction due to autoimmune thyroiditis.
- b. Canine Thyroid Stimulating Hormone (cTSH)—This procedure helps determine the site of the lesion in cases of hypothyroidism. In autoimmune thyroiditis the lesion is at the level of the thyroid and the pituitary gland functions normally. The cTSH concentration is expected to be abnormally elevated in dogs with thyroid atrophy from autoimmune thyroiditis.
- c. Thyroglobulin Autoantibodies (TgAA)—This procedure is an indication of the presence of the autoimmune process in the dog's thyroid.

### Certification

#### a. Normal

FT4      Within normal range  
cTSH     Within normal range  
TgAA     Negative

#### b. Positive autoimmune thyroiditis

FT4      Less than normal range  
cTSH     Greater than normal range  
TgAA     Positive

#### c. Positive compensative autoimmune thyroiditis

FT4      Within normal range  
cTSH     Greater than normal range or  
            Equal to normal range  
TgAA     Positive

#### d. Idiopathically reduced thyroid function

FT4D     Less than normal range  
cTSH     Greater than normal range  
TgAA     Negative

#### e. All other results are considered equivocal