

Info for Vets - C-Stamp



The C-Stamp is an important part of the German Shepherd Schutzhund Club of Canada's commitment to the ongoing health of the German Shepherd Dog.

To participate, we require that you understand the following:

It is imperative that you positively verify the identity of the dog presented to you based on the documents presented and the microchip in the dog.

Dogs must be micro-chipped. A tattoo only is insufficient identification. If a dog is presented to you without a microchip, you will need to chip the dog and scan the chip to verify it before proceeding with the x-rays. One of the stickers with the chip number can be affixed to the pedigree document.

The Giessen Dysplasia Centre (DZG) WILL REJECT if the x-rays are not to their specifications. If the x-rays are rejected, you will need to re-x-ray the dog.

Criteria:

- Only German Shepherd Dogs are eligible.
- On the day the x-rays are taken, the dog must be 12 months of age or older.
- Only German Shepherd Dogs with registration papers/pedigree recognized by the GSSCC can participate. This includes CKC, AKC, German (SV), or any FCI recognized country, i.e. most European countries. If you are in doubt, consult our director via the phone number listed below.
- Dogs MUST be sedated during hip x-rays.
- All dogs x-rayed for this program must be microchipped. This identification MUST correspond to their registration papers.
- The evaluation forms as presented must be completed and signed by the veterinarian and the owner.
- X-rays must be uploaded to the VetXL portal. They must be in Dicom format.
<https://www.myvetx.com/en/Logon/default.aspx>
The images must be uploaded under "Foreign Breeding Club." Select "Dr. Bernd Tellhelm" from the list of experts.

The following information must be exposed on the identification plate of the x-ray:

- Complete registered name of the dog as it appears on the registration
- Registration Number
- Date of Birth
- Date x-ray was taken
- Name of current owner
- Name of veterinarian and address of clinic/hospital

An additional training webinar is available for a fee if you wish to pursue it. Please contact our director as listed below for more details.

Cathie Pierson (250) 465-8532
cathiepierson@gmail.com

The following letter from Dr. Tellhelm outlines a webinar and certification that is a mandatory requirement for the WUSV A stamp screening procedure but is optional for the GSSCC C stamp screening procedure.

The online portal process applies for both WUSV A stamp and GSSCC C stamp.

Dr. Bernd Tellhelm

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Information for WUSV Clubs

Requirements for veterinarians selected to make radiographs for WUSV HD-ED procedure

Dear colleagues,

Two steps are necessary to get the certification to take radiographs for GSD in the context of the WUSV A stamp screening procedure for HD, ED, OCD.

First step:

Successful participation in a webinar which will be online through the DZG webpage. This will familiarize you with the basics of HD-ED screening and the technical requirements. The most important criteria are positioning of the joints and quality (detail) of the x-rays.

Attendance in the webinar only makes sense for veterinarians who are using **digital radiography already. We will accept digital radiographs in DICOM format only.**

Good image quality / detail and correct positioning is essential for correct and fair scoring.

Second step:

To obtain your certificate, after the webinar you will have to send HD and ED x-rays of five GSD to the central scoring expert to approve the technical quality of your radiographs as well as the correct identification of the dogs on the x-rays.

It is mandatory that all images are submitted via the online portal www.myvetsxl.com/en/Logon/default.aspx.



Therefore you will need to meet the technical requirements to use the portal.

We highly recommend to sign up in the portal under vetsXL.com and complete a test run before starting the certification procedure.

Before starting an upload procedure you will have to register and create a personalized account. Once registered you can sign in and upload images under your own account. You can use the following URL for your registration:

www.myvetsxl.com/en/UserRegistration/default.aspx

The registration process will be explained step by step.

vetsXL.com  You are not logged on. [Login](#) [Language](#) [Color scheme](#) [Contact](#) [Imprint](#) 

Registration

Thank you for your interest in registering with vetsXL.com. Please note that vetsXL.com is a veterinary internet portal and offers its services exclusively for vets and companies, organizations and institutions collaborating with vets. Please register only if you belong to this group of people. Thank you!

Access data

The vetsXL ID together with your password is your access to vetsXL.com. As your vetsXL-ID, please use your primary email address. You need your vetsXL-ID for all interactions with vetsXL.com, to purchase and subscribe to our web applications, to link your software with vetsXL.com and to communicate with us. As part of the registration process and each time you change your vetsXL-ID, we send you an email with a confirmation link which you have to click on for verification purposes. To protect your account, all websites you use to manage your vetsXL-ID are SSL encrypted. You receive the best protection by using a secure password, which should be at least 8 characters long and contain at least one number, capital and lower-case letters as well as punctuation and special characters.

vetsXL ID:

Password:

Password confirmation:

In case you forget your password, we will ask you a security question. Together with your date of birth, the respective answer will help us to verify your identity. Please be sure to enter a question which you can answer clearly.

Security question:

Answer:

Personal data

We require your personal data in order to clearly identify you. It will be used exclusively by vetsXL.com and never be made available for third parties outside the portal. We use your title, first name, last name and vetsXL-ID in some areas of the portal to clearly identify you. If you send messages through vetsXL.com, then we show your title, first name, last name and additional designation in your email signature.

Title:

First name:

Last name:

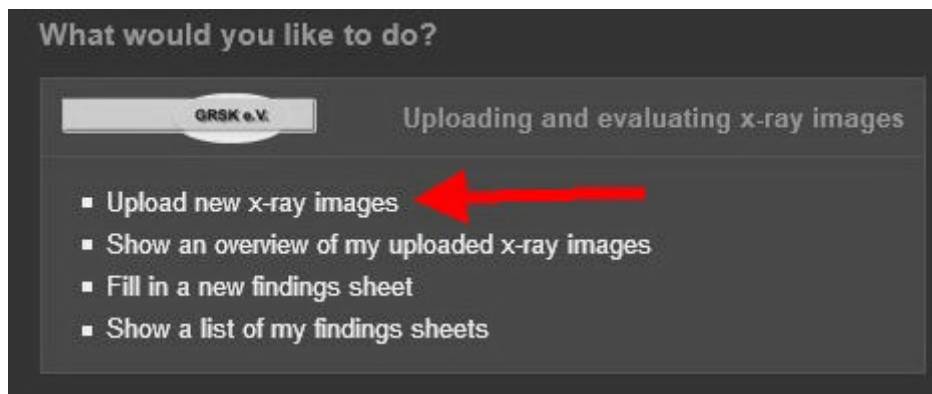
Additional designation:

Date of birth: Day Month Year

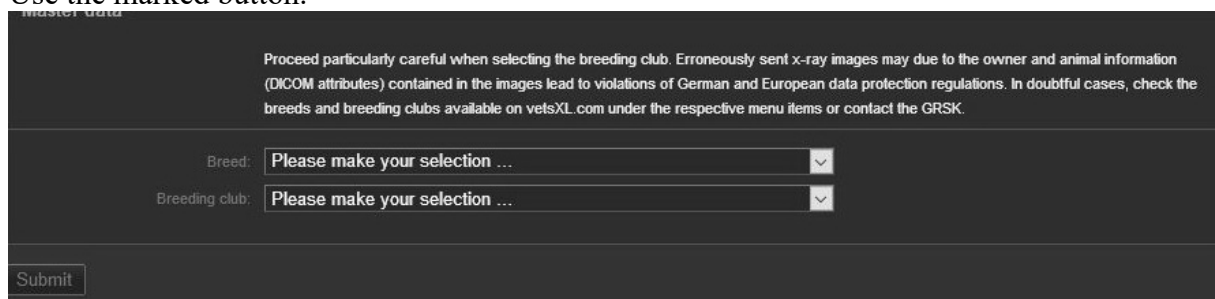
Should you encounter any problems during the registration process please contact Mr. Mattes from the VetZ company:

myvetsxladmin@vetsxl.com or M.Mattes@vetz.vet or myself.

If you are registered the upload procedure is as follows:



Use the marked button.



Proceed particularly careful when selecting the breeding club. Erroneously sent x-ray images may due to the owner and animal information (DICOM attributes) contained in the images lead to violations of German and European data protection regulations. In doubtful cases, check the breeds and breeding clubs available on vetsXL.com under the respective menu items or contact the GRSK.

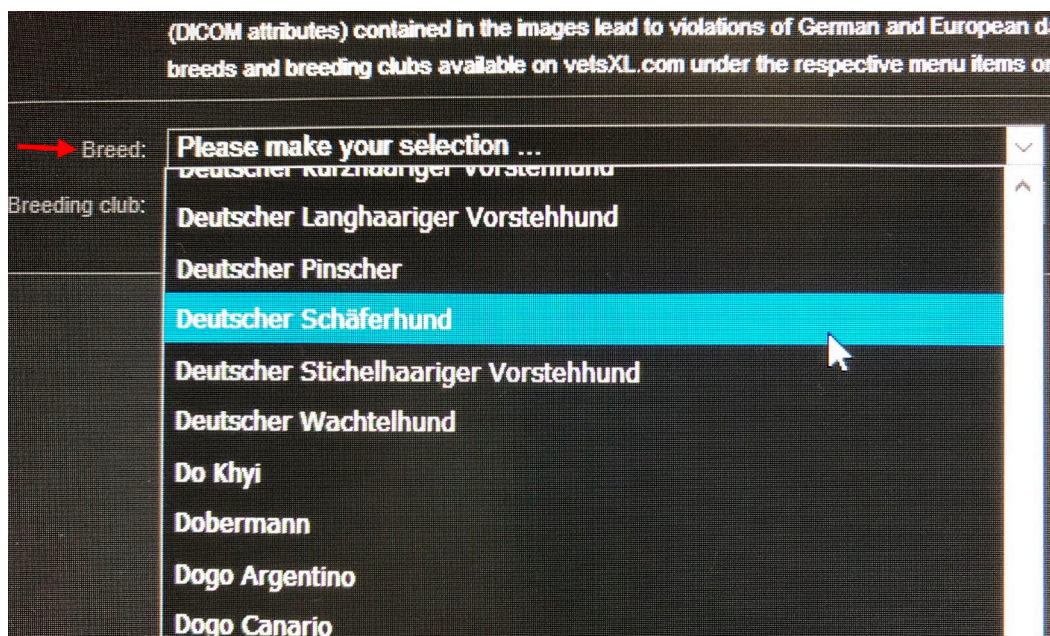
Breed: Please make your selection ...

Breeding club: Please make your selection ...

Submit

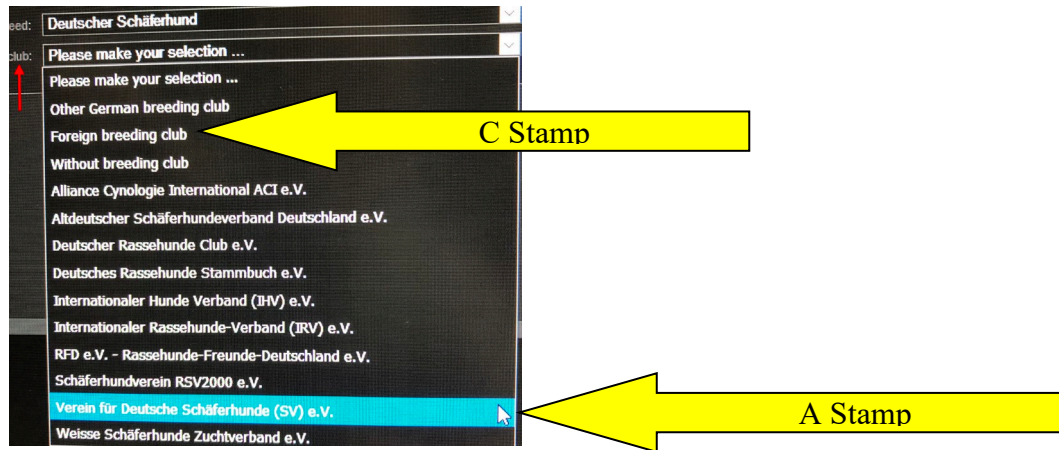
Then you have to select breed and breed club.

First the breed.



Select the blue marked breed **Deutscher Schäferhund (German Shepherd Dog)**

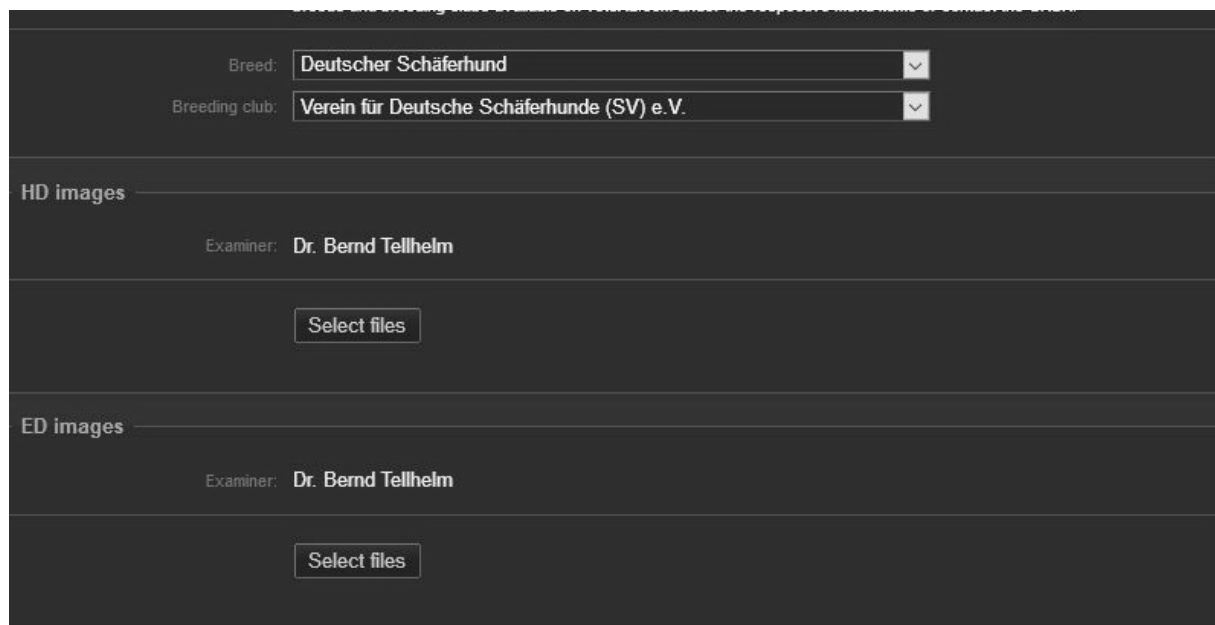
Then the breed club.



A Stamp - select Verein für Deutsche Schäferhunde (SV) e. V.

C Stamp – select Foreign breeding club

And then from the list of experts select Dr. Bernd Tellhelm



On the following screen you can upload your files.


Breed:

Breeding club:

HD images

Examiner: Dr. Bernd Tellhelm

Select files



Dicom (CR)

Number:	9847
Date of image acquisition:	25/09/2018 15:49:31
Owner/animal:	Musolino, Luciano Wacron del Rione Antico 380260100505683
Date of birth:	24/04/2017
Sex:	Male

ED images

Examiner: Dr. Bernd Tellhelm

Select files


Dicom (CR)

Number:	266596
Date of image acquisition:	21/05/2019 13:00:34
Owner/animal:	Musolino, Luciano Wacron del Rione Antico 380260100505683
Date of birth:	24/04/2017
Sex:	Male

Submit

It is very important to upload HD into *HD images* and ED into *ED images*.

Additional images from vertebral column should be uploaded under *HD images* and images from other joints under *ED images*.

The filmless online procedure will not only enable a better scoring of the x-rays but will also be an important contribution to the protection of environment.

Best regards

Dr. Bernd Tellhelm
SV scrutineer

E-mail: Bernd.Tellhelm@vetmed.uni-giessen.de
Bernd.Tellhelm@googlemail.com

How to take and read hip joint radiographs in a structured way

Mark Flückiger Prof. Dr.med.vet., Dipl. ECVDI Dysplasia Committee Zurich
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Prevalence of canine hip dysplasia (CHD) can be reduced by controlling dogs for CHD radiographically and selecting those with normal hip joints for breeding. Best results will be achieved when phenotypic scoring is combined with progeny testing. The quality of a dog can be expressed as breeding value.

For official CHD examination a dog must be at least 1 year of age (Europe, UK, Australia) or 2 years of age (US) respectively. Hip radiographs are taken with the dog in complete muscle relaxation, making deep sedation or anaesthesia mandatory. The dog is placed in exact dorsal recumbence, the hind limbs are extended caudally and the stifles rotated internally so that the patellae are superimposed over the femora (Fig. 1). The beam is centred over the caudal end of the pelvis so that the entire pelvis, the last lumbar vertebra and both stifles are included on the film (Fig. 2). A second projection of the pelvis with the stifles abducted is recommended but voluntary in most countries (Figure 3).

Hip joints are assessed for laxity and morphological changes of the acetabulum and proximal femur. Radiographic criteria for CHD scoring are a) degree of laxity, b) width of joint space, c) percentage of femoral head coverage, and signs of arthrosis/DJD both of the d) acetabulum and e) the femoral head and neck. Final scoring depends on the modality used in the country of examination.

As an example the Swiss scoring mode is presented (Table 1), which can be transformed into a CHD grading according to FCI (Fédération Cynologique Internationale), (Table 2). The following 6 parameters are evaluated and scored separately for each hip joint (Figure 3):

1. Norberg angle on the radiograph with the hind limbs extended
2. Position of femoral head centre (FHC) relative to dorsal acetabular edge (DAE), (degree of subluxation)
3. Shape of cranio-lateral acetabular edge
4. Shape and thickness of the subchondral bone of the cranial acetabular part
5. Shape of femoral head and femoral neck respectively
6. Osteophytes on the caudolateral edge of femoral neck (Morganline)

Each joint is graded separately. The joint with the higher score defines the degree of CHD for the dog. Total score is dominated by 3 parameters (parameter 1 to 3 in table 1): Norberg angle (NA), degree of subluxation, and remodelling of the cranial acetabular edge respectively.

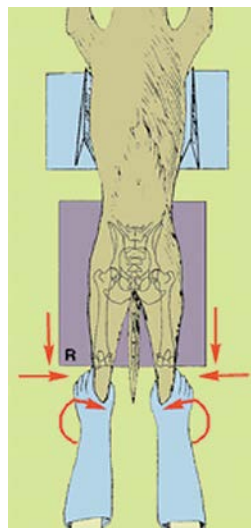


Figure 1: Schematic drawing showing how to position a dog correctly for radiographic examination for CHD (from: www.fondazione.saluteanimale.it/CENTRALE/index.html)



Figure 2: Hip joint projection with hind limbs extended and slightly pronated. The x-ray beam is centered over the caudal edge of the pelvis. The entire pelvis and both stifles are depicted. Note marker (D) indicating right side of the dog.

Figure 3: Hip joint projection with stifles abducted and the tarsi elevated approximately 25 cm off the table. The x-ray beam is centred directly over the hip joints.



Table 1. Radiographic criteria for CHD grading (The Swiss scoring mode)

Norberg Angle (JS= Joint Space)	Relation FHC/ DAE*, Width of Joint Space (JS)	Cranio-lateral Acetabular Edge (CAE)	Cranial Subchondral Acetabular Bone	Femoral Head (H), Femoral Neck (N)	Morgan-Line	Score
$\geq 105^\circ$ JS congruent	FHC medial to DAE (> 2 mm), JS narrow	parallel to femoral head	fine, even	H: round, smooth N: well demarcated	not visible	0
$\geq 105^\circ$, but JS widened slightly, or $< 105^\circ$, but JS narrow	FHC medial to DAE (1-2 mm), JS minimally divergent	horizontal on lateral 1/4	even	H: round N: poorly demarcated (cylindrical)	edged shoulder on view with stifles abducted care: smooth bump not scored.	1
$\geq 100^\circ$	FHC super-imposed on DAE, JS slightly divergent	slightly flattened, or mild exostosis	slightly thickened laterally, slightly reduced medially	H: slightly flattened N: mild exostosis	fine linear spur (up to 1 mm wide)	2
$\geq 90^\circ$	FHC lateral to DAE (1-5 mm), JS moderately divergent	moderately flattened, mild exostosis, two part surface	moderately thickened laterally, moderately reduced medially	H: moderately flattened N: mild exostosis	well defined spur (up to 3 mm wide)	3
$\geq 80^\circ$	FHC lateral to DAE (6-10 mm), JS markedly divergent	markedly flattened, moderate exostosis	markedly thickened laterally, may not be present medially.	H: moderately flattened N: moderate exostosis	broad irregular spur (> 3 mm wide)	4
$< 80^\circ$	FHC lateral to DAE (>10 mm), or Luxation	DAE absent, acetabulum markedly deformed	blending with lateral pelvic rim or absent	H: severely deformed N: massive exostosis	spur incorporated in or superimposed by general exostosis	5

* FHC= Femoral Head Centre ; DAE = Dorsal Acetabular Edge

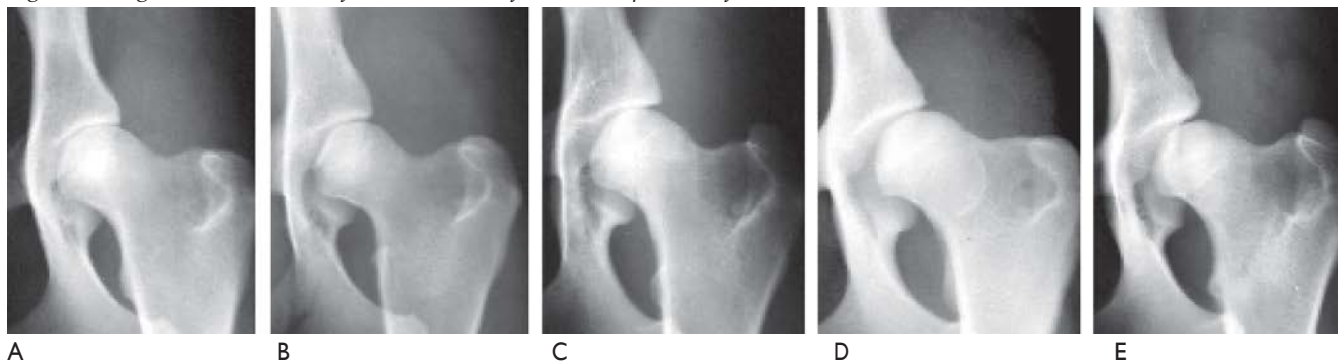
Table 2. Grading key

Total Score of the worse Hip Joint	Degree of CHD (according to FCI)	
0 - 2	A	Normal, no evidence of CHD
3 - 6	B	Borderline
7 -12	C	Mild CHD
13 -18	D	Moderate CHD
> 18	E	Severe CHD

Score may be subdivided further and degree of CHD given as A1 (score 0), A2 (score 1-2), B1 (3-4), B2 (5-6), C1 (7-9) etc. if desired.

Caution: Total score reflects degree of CHD only approximately. Degree of CHD may be worse than indicated by score, particularly in young dogs with obvious hip joint laxity but no signs of arthrosis/arthritits (yet)! NA is the most valuable parameter as it can be measured objectively, has a wide scale of values and a high correlation and regression with the final scoring.

Figure 4: FCI grades A to E. (Taken from the website of the FSA <http://www.fondazionealutteamimale.it/CENTRALE/index.html>)



A

B

C

D

E

Radiographic Procedure and Scoring of Elbow Dysplasia (ED) in the Dog

(Requirements for the IEWG standardized screening procedure, updated version 2011)

Mark Flückiger, Assoc. Prof., Dr.med.vet., Dip. ECVDI
Dysplasia Committee, University of Zurich, Switzerland

Radiographic technique

1. Minimal age for official scoring "sound" is 12 months. Some breed clubs have issued specific requirements. Earlier scoring "dysplastic" is possible in dogs with obvious primary lesions. **Dogs showing an elbow lameness should get radiographed at any age.**
2. Both elbows are radiographed.
3. Rare Earth screens with a speed of 200 or less are recommended in film-screen systems.
4. The elbow is placed directly on the cassette, no grid is needed.
5. The beam is collimated to improve image quality (does not apply in digital systems).
6. For the mediolateral projection the elbow is flexed (Fig. 1, 45-60° opening angle between humerus and radius), resulting in concentric superimposition of the humeral condyles. The medial coronoid process (MCP) itself is best identified on a mediolateral view with the limb extended and 15° supinated (Fig. 2, very important in GSD). Good results are achieved with a 50 – 60 kV-setting.
7. A craniocaudal 15° pronated view is strongly recommended to identify OC lesions (Fig.3, not so important in GSD because OCD is rare).
8. Radiographs are permanently marked with a) the date of the examination, b) the identity of the dog, c) the identity of the owner of the dog and d) the clinic making the study.

Positioning elbow joint, radiographs

Figure 1
Mediolateral view, 45 ° flexed



Figure 2
Mediolateral view, 120 ° extended



Figure 3
Cranio-15°lateral-caudomedial



Lumbar-Sacral Transitional Vertebrae / LTV

and OCD

from: Bernd Tellhelm

Dysplasie Zentrum Giessen GbR

Dr. Bernd Tellhelm, Dr. Nele Eley, Dr. Kerstin von Pückler

Transitional Vertebrae develop at the transition of the vertebral spine segments (e.g. lumbar spine / sacral bone). If this occurs the deformed vertebra shows characteristics of the front segment and of the past segment as well.

The lumbar spine of dogs normally consists of seven vertebrae (L). Three vertebrae (S), which are totally fused at an age of 18 month at latest are forming the sacral bone (Figure 1).

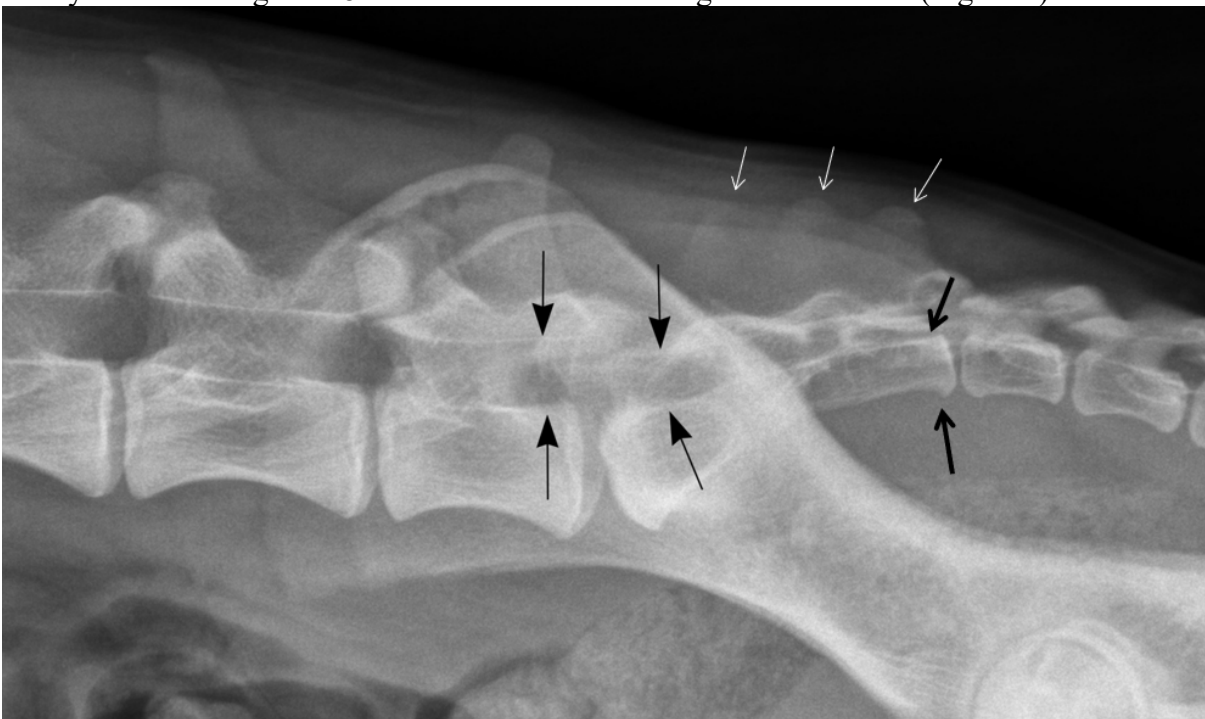


Figure 1:

Latero-lateral radiograph of a normal lumbar-sacral junction. The bony structures are well defined, the vertebral canal is wide (large black arrows). The three sacral vertebrae (caudal large black arrows to small black arrows) are totally fused and also the spinal processes (white arrows).

Between L7 and S1 exists a normal disc and there is no contact between the transverse processes and no contact to the alia of the ilium (Figure 2).

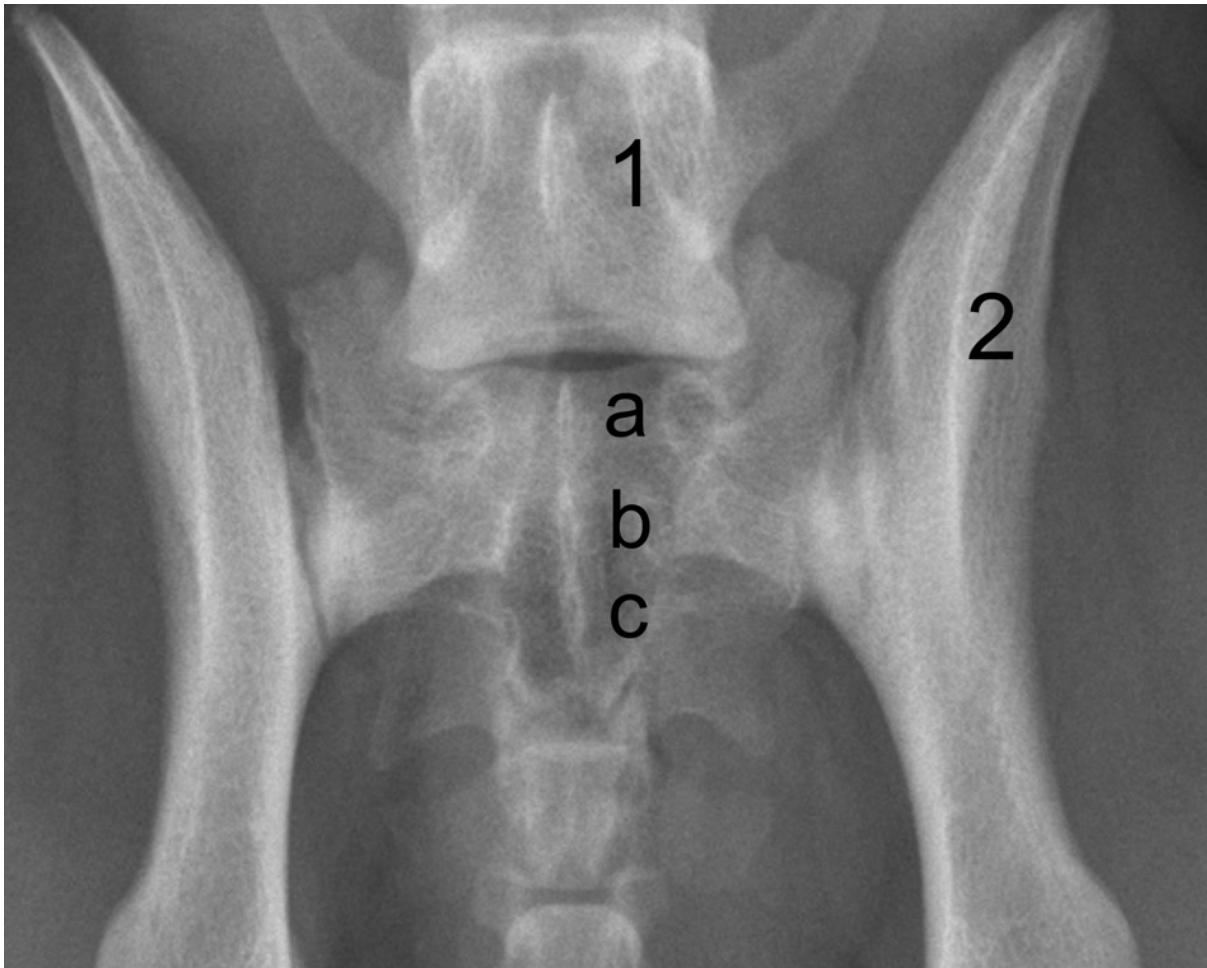


Figure 2

Hip-radiograph including the lumbar-sacral region. It shows a normal lumbar-sacral conjunction (Type 0). The transverse processes of the last lumbar vertebra / L7 (1) are symmetric with a normal orientation (cranio-lateral). There is no contact with the alia of the ilium (2). Sacral bone and L 7 are totally separated. The spinal processes of the sacral bone are fused (a, b, c).

Lumbar-sacral transitional vertebrae (LTV) develop in the region of L7 and S1. They are characterized by an abnormal form most frequently at the spinal and transvers processes. In an advanced stage the vertebral body can also be involved.

A correlation between LTV and the prevalence of Cauda Equina Syndrome (CES) is discussed.

Proposed by the Swiss Dysplasia Commission for the screening on hip radiographs LTV are divided in four types. The differentiation is based on two criteria:

1. Degree of the fusion of the spinal processes of the sacrum
2. Symmetric or asymmetric formation of the transverse processes and configuration of the contact area of transverse processes with the alia of the ilium.

Figure 2 demonstrates a normal lumbar-sacral conjunction (Type 0) on a pelvic radiograph.

Type 1 shows a normal anatomical form of L7 and sacrum bone but with an separated spinal process of S 1 (Figure 3).



Figure 3

Hip-radiograph including the lumbar-sacral region.

The spinal process (a) of the first sacral vertebra is separated. Symmetric LTV type 1 (1).

Type 2 includes all the different forms of LTV with more obvious abnormal anatomical findings if the development is symmetrically (Figure 4).

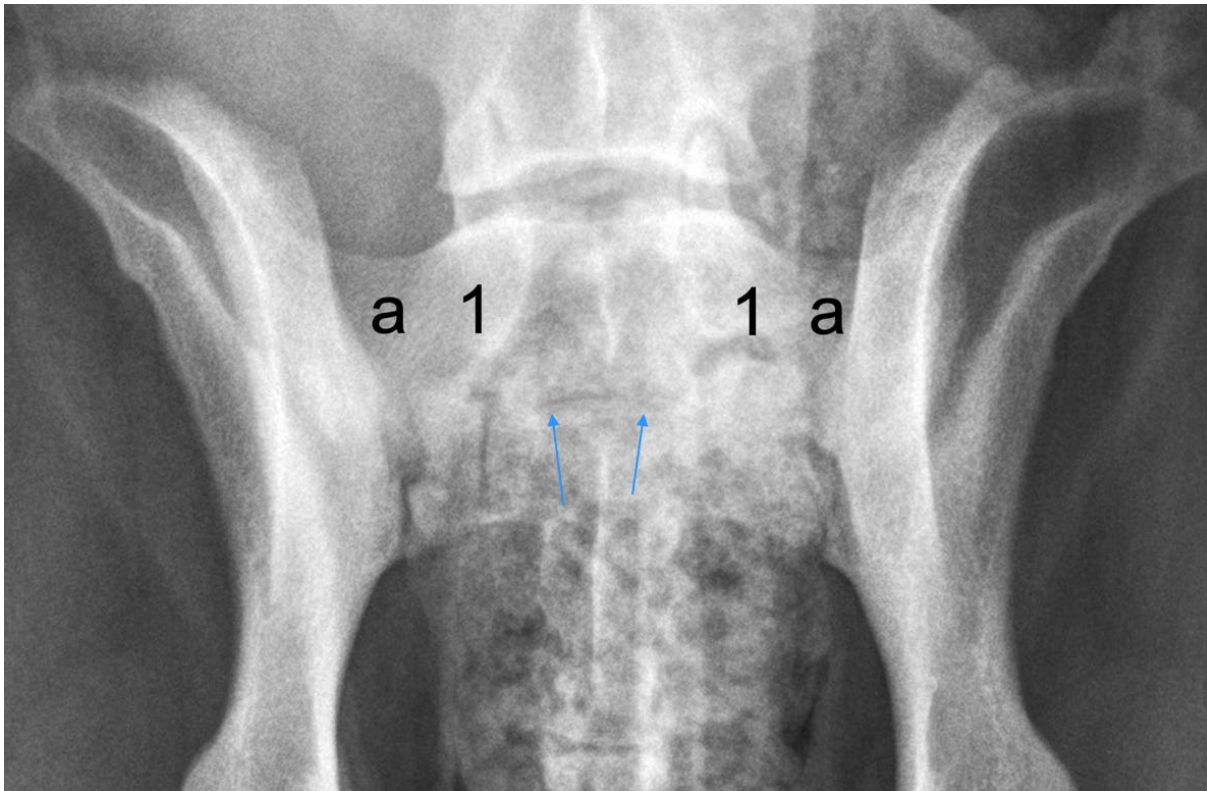


Figure 4
 Hip-radiograph including the lumbar sacral region. Demonstrated is a symmetric LTV (1) developing a broad contact area with the alia of the ilium by its transverse processes (a / Type 2). There is a partial intervertebral space between S1 and S 2 (Arrows)

All asymmetrical forms of LTV are included in Type 3 (Figure 5).

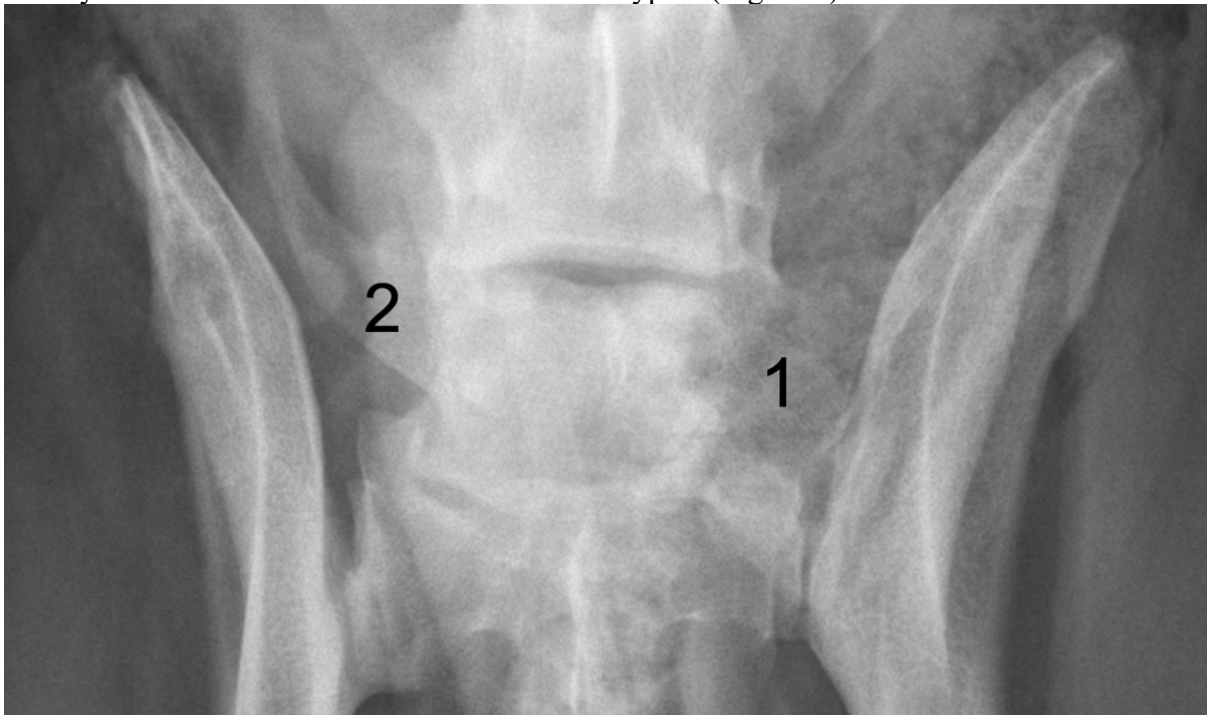


Figure 5
 Hip-radiograph including the lumbar sacral region. Demonstrated is an obviously asymmetric

developed LTV (Type 3). The left transverse process (1) of the vertebra has a broad contact area with the left alia of the ilium. The right transverse process (2) shows a normal configuration.

A very high risk for the dog to get a cauda equina syndrome (CES) is the development of an OCD (Osteochondrosis dissecans) at S1 (Figure 6). In such cases the disc between L7 and S1 is always damaged.

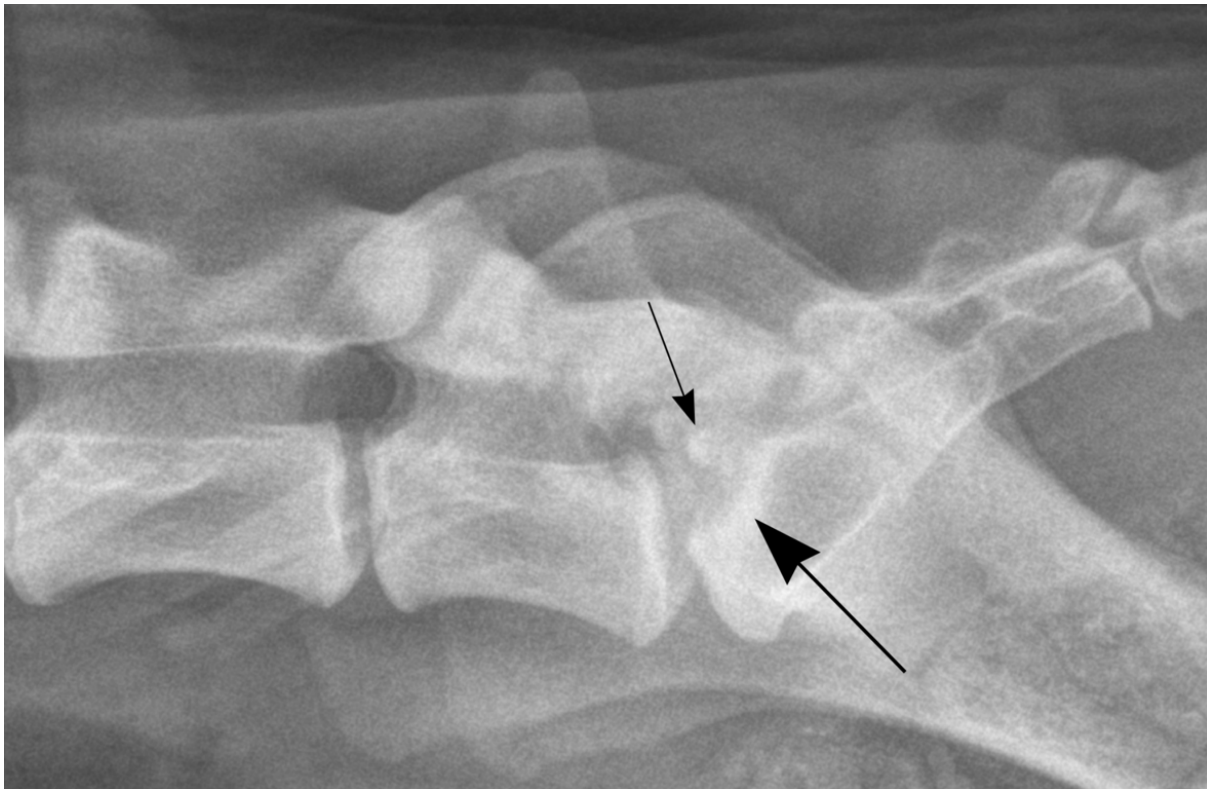
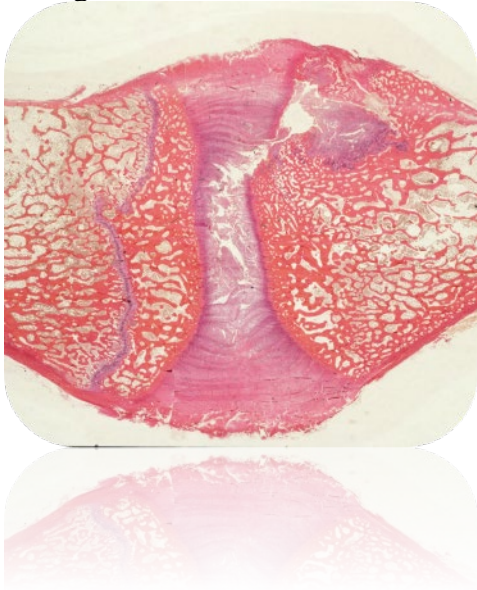


Figure 6

Latero-lateral radiograph of the lumbar-sacral conjunction of a dog 12 month of age with an OCD of the first sacral vertebra. The ossification of the front part of the sacral bone is incomplete (large arrow), a separate piece of bone (small arrow) is situated within the vertebral canal.

Actually the “Verein für Deutsche Schäferhunde” / SV has decided to include the anatomical changes at the lumbar sacral conjunction, especially LTV and OCD in the screening, but on a voluntary base. To examine LTV the standard pelvis radiograph for CHD is adequate. Except for the identification of a dog on different radiographs also for this examination it is very important that the total pelvis including L7 is displayed on the image (Figure 3). All CHD radiographs, which don't meet this requirement, are not evaluable and have to be refused in any case.

If a dog owner wants to have an examination concerning OCD an additional radiograph has to be made. The image has to demonstrate the region from L 4/5 to the first coccygeal vertebra on a latero-lateral view. The lumbar sacral conjunction has to be in the central beam, no axial rotation of vertebral column and pelvis and the technical quality (detail, contrast) must allow a detailed analysis of the bone structure (Figure 1).

Why is it of interest for a GSD owner to have this information?

From a medical point of view:

A frequent and very dramatic disease in GSD about 4-6 years of age is the Cauda Equina Syndrome (CES).

Some studies have shown that in GSD there is an association between the incidence of LTV type 2 and 3 and CES. Mark Flückiger et al (2006) found in a population of 4000 dogs without CES a frequency of 3,5% LTV type 2,3, while in 92 dogs with CES 16,3% had LTV 2 and 3. The risk for CES in German Shepherd Dogs with LTV was eight times higher than in other breeds.

There are no studies concerning risk factors for CES in GSD with OCD at L7:S1 but because of the pathological changes (see above) the risk is high and such dogs sicken in an earlier age.

Lang et al (1992) found: More than 30% (21 of 65) of German Shepherd dogs with clinical signs of cauda equina compression had radiographic and pathologic abnormalities compatible with osteochondrosis of the sacral endplate.

They also describe a predisposition of GSD for this form of OCD.

Therefore the knowledge of the described pathologies can be important for owners concerning the future of the dog.

From a genetical point of view:

The frequency of LTV in GSD is about 30%, type 2 and 3 with about 8% - 10%. In some breeds dogs with LTV type 2 and 3 are not allowed for breeding. The question arose if this would result in a reduction of the higher types of LTV in the population.

Gluding et al (2017) demonstrated in a study that in GSD the genetic correlation between LTV type 1 and LTV type 2/3 was very high (0,5 – 0,6). The overall heritability was about 0,25. To reduce the frequency of LTV type 2/3 also type 1 has to be included in a phenotypic selection / breeding program. This study also showed that with a more detailed screening the LTV type 1 is obviously more frequent (up to 60%).

Therefore a phenotypic selection against LTV is not possible. It would lead to a drastic reduction of the population for breeding. If a selection will be necessary Breed Value Estimation (BRV) will be the only possibility.

Lumbosacral OCD has a genetical basis.

There are not many studies concerning the heritability of lumbosacral OCD. The heritability in a study of Nele Ondreka (now Eley) (2009) was about 50% / 0,5.

Even if there is a predisposition for this disease for GSD it is rare compared to LTV.

At present it is in the responsibility of SV breeders if they use dogs with LTV or OCD for breeding.

Literature

Flückiger, Mark et al, 2006

A Lumbosacral Transitional Vertebra in the Dog Predisposes to Cauda Equina Syndrome
Veterinary Radiology and Ultrasound, Vol. 47, No.1

Lang, Johann et al 2006

A sacral lesion resembling osteochondrosis in the German Shepherd Dog.
Veterinary Radiology & Ultrasound 33(2):69 - 76 · March 1992

Gluding, Dennis et al, 2017

Population Genetics of Lumbosacral Transitional Vertebrae in German Shepherd Dogs
GRSK e. V. meeting, Vienna , November 4th.

Ondreka (Eley), Nele, 2009

RÖNTGENMERKMALE DES LUMBOSAKRALEN ÜBERGANGS BEIM DEUTSCHEN
SCHÄFERHUND IM VERGLEICH ZU ANDEREN RASSEN UND
GENETIK DIESER MERKMALE BEIM DEUTSCHEN SCHÄFERHUND
Graduate Thesis, Department Small Animal Surgery, University Giessen

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