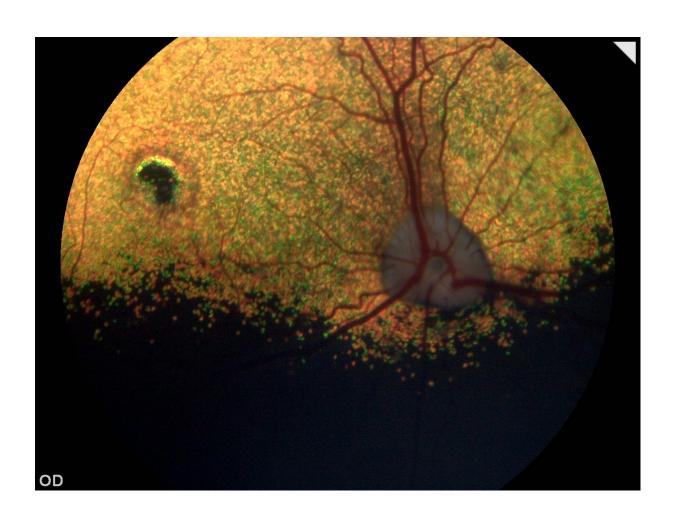
HED SESSION. ANTWERP 2019



In cooperation with the Belgium panel

Labrador Retriever, 6yo, Male, unilateral (OD)



Labrador Retriever, 6yo, Male, unilateral (OD)

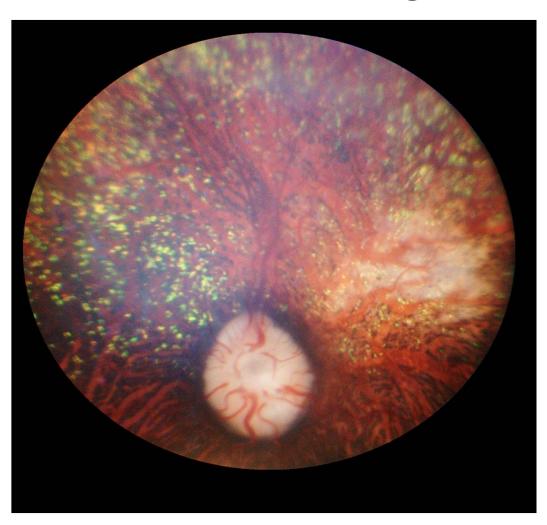
Descriptive comments:	focal scar	of ch	oriore	etinit	is			8.10	CAA: PLA	mild	
									\	∖ □ mode	rate
										sever	е
									ICA <	- narro	w (moderate)
Eye disease no		. \square mild		S	evere				(width)	closed	d (severe)
Results for the kno	own or presumed	hereditary	eye diseas	es (KP-H	IED):		Results valid for 12 mor	iths			
	ı	WNAFFECTED U	** NDETERMINED	* AFFECTED				UNAFFECTED	*** SUSPICIOUS	AFFECTED	
1. Persistent Pupillary		+		\sqsubseteq	iris cornea	11.	Entropion/Trichiasis	+			
Persistent Hyperpl.T Lentis/Primary Vitre	unica Vasculosa ous (PHTVL/PHPV)			\sqsubseteq	grade 1 grade 2-6	12.	Ectropion/Macroblepharon				
3. Cataract (congenital)	ф			(multi)focal	13.	Distichiasis /Ectopic cilia				
4. Retinal Dysplasia (R	D)				geographical total	14.	Corneal dystrophy				cortical post. pol.
5. Hypoplastic-/Micro-p	papilla				choroid. hypoplasia	15.	Cataract (non-congenital)				ant sut. I.
6. Collie Eye Anomaly					coloboma other:	16.	Lens luxation (primary)				nucleus
7. Other:		<u> </u>			mild mild	17.	Retinal degeneration (PRA	A) 🗖			
8. IndoComeal Angle A	Abriormanty. (ICAA)				severe	18.	Other:	ф.			
Interpretation	ant the major majorining	l avddamaa a	f the lengues of		d bonditon, our discos	//-	(D.LIED) and alford subsequent lie	Kantadii ala	unifi on the stat	hana la accab	a, dela masa
* "Unaffected" signifies tr** The animal displays cli							(P-HED) specified, whereas "a poclusive.	nected" sig	inities that th	nere is such (evidence.
							nfirm the diagnosis. Reexamin	ation in	.months.		

Chorioretinitis: an inflammatory process of the choroidal and outer retinal structures, observed in the acute phase as blurring, swollen, edematous areas and later as chorioretinal scaring shown as pigmented spots with hyperreflective borders

HED Manual Ch. 6 Guidelines

"Section Examination, part: 'Descriptive comments': In this section, the examiner should describe any findings in the eye and adnexae, either KP-HED or other.

Australian Shepherd, 3yo, Male, left eye, bilateral finding



Australian Shepherd, 3yo, Male, left eye, bilateral finding

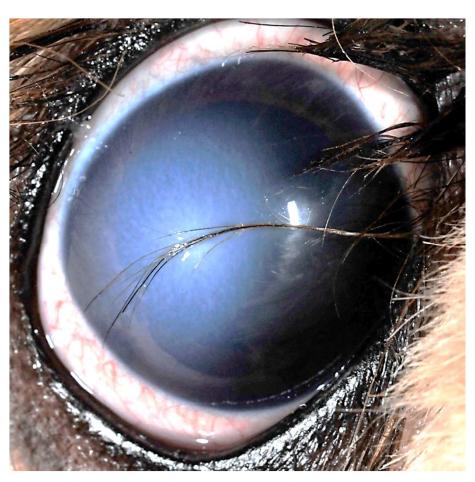
Descriptive comments:						8. 10	CAA: PLA $ eg$	mild	
•••••							\	modera	ate
								severe	
							ICA 💳	narrow	(moderate)
						•••••	(width)	_	
Eye disease no.	🗀 m	ild	severe				(WIGHT)	closed	(severe)
Results for the known or presumed	heredita	ry eye diseas	es (KP-HED):		Results valid for 12 mo	nths			
	* UNAFFECTED	** UNDETERMINED	* AFFECTED			UNAFFECTED	*** SUSPICIOUS	AFFECTED	
1. Persistent Pupillary Membrane (PPM)	+		iris	cornea lamina	11. Entropion/Trichiasis	+			
 Persistent Hyperpl.Tunica Vasculosa Lentis/Primary Vitreous (PHTVL/PHPV) 	ф		grade		12. Ectropion/Macroblepharo	n 📥			
3. Cataract (congenital)	\Box		(multi)	focal	13. Distichiasis /Ectopic cilia				
4. Retinal Dysplasia (RD)	ф		geogra		14. Corneal dystrophy				cortical
5. Hypoplastic-/Micro-papilla	ф		choroi	d. hypoplasia	15. Cataract (non-congenital)				ant sut. I.
6. Collie Eye Anomaly (CEA)			colobo	oma	16. Lens luxation (primary)				nucleus
7. Other:	中		mild		17. Retinal degeneration (PR	A) 🗀			Other
8. IridoComeal Angle Abnormality. (ICAA)			model	eate	18. Other:	📥			
Interpretation									
* "Unaffected" signifies that there is no clinical	al evidence	of the known of	or presumed heredita	ary eye disease	es (KP-HED) specified, whereas "a	affected" sig	nifies that th	here is such e	vidence.
** The animal displays clinical features that co		•	•	_					
*** The animal displays minor, but specific clini	ical signs o	of the KP-HED r	mentioned. Further d	evelopment wi	ill confirm the diagnosis. Reexamir	nation in	months.		

- "Collie Eye Anomaly (CEA): known hereditary congenital eye disease;
- "a congenital syndrome of ocular anomalies mainly in Collie breeds affecting the choroid and sclera and indirectly the retina and optic disc.
- "characterized by bilateral and often symmetrical defects including choroidal hypoplasia with or without coloboma, retinal detachment and intraocular hemorrhage.

HED Manual Ch. 6 Guidelines

"Tick no 6. Collie eye anomaly (CEA)

Shih-tzu, 4yo, Female, Right eye Bilateral/symmetrical



Shih-tzu, 4yo, Female, Right eye, Bilateral/symmetrical

Descriptive comments:	14. endot	helial					8. IC/	AA: PLA	mild
								\	moderate
									severe
								ICA <	narrow (moderate)
Eye disease no	14	. III mik	d	sev	vere			(width)	closed (severe)
Results for the kn	own or presumed	hereditary	eye diseas	es (KP-HE	ED):	Results valid for 12 mor	nths		
		UNAFFECTED (** JNDETERMINED	AFFECTED			UNAFFECTED	*** SUSPICIOUS	AFFECTED *
1. Persistent Pupillary	Membrane (PPM)	ф			iris cornea	11. Entropion/Trichiasis			
Persistent Hyperpl. Lentis/Primary Vitre	Tunica Vasculosa ous (PHTVL/PHPV)	\Box			grade 1 grade 2-6	12. Ectropion/Macroblepharor			
3. Cataract (congenita	ıl)				(multi)focal	13. Distichiasis /Ectopic cilia	\Box		
4. Retinal Dysplasia (F	RD)				geographical	14. Corneal dystrophy			cortical
5. Hypoplastic-/Micro-	papilla				choroid. hypoplasia	15. Cataract (non-congenital)	\Box		post. pol. ant sut. I.
6. Collie Eye Anomaly	(CEA)				coloboma other:	16. Lens luxation (primary)			punctata nucleus other
7. Other:					mild	17. Retinal degeneration (PRA	A) 🗀		other
8. IridoComeal Angle 7	Abnormality. (ICAA)				moderate severe	18. Other:			
Interpretation							•		
** The animal displays cl		ould possibly	fit the KP-HE	D mentione	ed, but the changes are	es (KP-HED) specified, whereas "a inconclusive.			ere is such evidence.

- Trichiasis: presumed hereditary eye disease or acquired abnormality of deviated hairs on a normal place around the lid fissure, irritating the conjunctiva, the free lid margin of the opposite lid and/or the globe.
- "Macroblepharon: Fissure length (stretched) in dog over 40 mm

- "Corneal dystrophy: presumed hereditary eye disease; noninflammatory corneal opacity in one or more of the corneal layers (epithelium, stroma, endothelium), usually bilateral but not always symmetrical. The onset in one eye may precede the other.
- "Endothelial corneal dystrophy: abnormal loss of the inner lining (endothelium) of cornea causing progressive fluid retention (edema) leading to increased corneal thickness, keratitis, corneal clouding and decreased vision

HED Manual Ch. 6 Guidelines

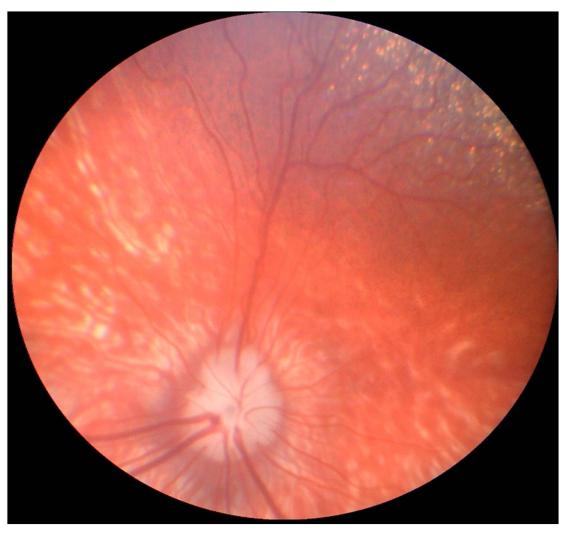
Tick no 11: Entropion/Trichiasis: No further details such as deleting or encircling entropion or trichiasis are to be mentioned.

Only if there are clinical signs of corneal irritation such as detritus on the lid hairs, corneal edema, vessels, defects or pigmentation at the location of the entropionised lid margin, the examiner will also tick the box: "severe" in the comment area.

"Tick no 12: Macroblepharon

Tick no 14: Corneal dystrophy. If **endothelial dystrophy** (bilateral progressive diffuse, deep corneal edema is recognized, the examiner will also tick the box: "**severe**" in the comment area.

Merle Australian Shepherd, 3yo, Female, left eye, bilateral finding

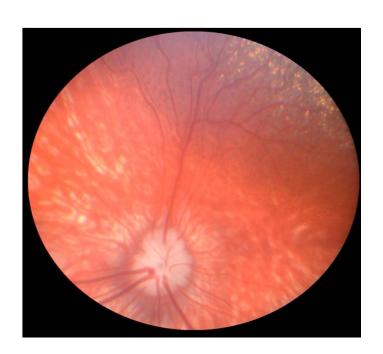


Merle Australian Shepherd, 3yo, Female, left eye Bilateral finding, Genetic test of CEA: carrier

Descriptive comments:					8. IC/	AA: PLA 🦯	mild
						\	moderate
							severe
						ICA 🖯	- narrow (moderate)
Eye disease no		mild	severe			(width)	closed (severe)
Results for the known	or presumed hered	itary eye diseas	es (KP-HED):	Results valid for 12 mon	ths		
	UNAFFECT	** TED UNDETERMINED	* AFFECTED		* UNAFFECTED	*** SUSPICIOUS	AFFECTED *
1. Persistent Pupillary Mem	brane (PPM)		iris cornea	11. Entropion/Trichiasis	ф		
Persistent Hyperpl.Tunic Lentis/Primary Vitreous (a Vasculosa PHTVL/PHPV)		grade 1 grade 2-6	12. Ectropion/Macroblepharon	—		
3. Cataract (congenital)	+		(multi)focal	13. Distichiasis /Ectopic cilia			
4. Retinal Dysplasia (RD)	+		geographical	14. Corneal dystrophy	ф		cortical post. pol.
5. Hypoplastic-/Micro-papill	а 🗀		choroid. hypoplasia	15. Cataract (non-congenital)	ф		ant sut. I.
6. Collie Eye Anomaly (CEA)	+		coloboma other:	16. Lens luxation (primary)	—		nucleus
7. Other:	+		mild	17. Retinal degeneration (PRA	ı) 🛱		
8. IndoComeal Angle Abno	mailty. (ICAA)		severe	18. Other:	—		
Interpretation							
			or presumed hereditary eye diseas ED mentioned, but the changes are	ses (KP-HED) specified, whereas "aff	ected" sigr	nifies that th	ere is such evidence.
		•		e inconcrusive. vill confirm the diagnosis. Reexamina	tion in	months.	

HED Manual Ch. 5 Definitions - Guidelines

"Normal fundus



American Bobtail cat, 1yo, Female. Right eye, bilateral finding



American Bobtail, 1yo, Female, Right eye, bilateral finding

Descriptive comments:					8. IC	AA: PLA	mild mild
						\	moderate
						,	severe
						ICA 💳	- narrow (moderate)
Eye disease no	mild		severe			(width)	closed (severe)
Results for the known of	or presumed hereditary of	eye diseases ((KP-HED):	Results valid for 12 mont	hs		
	UNAFFECTED UN	** IDETERMINED AFFI	* ECTED	ι	INAFFECTED	*** SUSPICIOUS	AFFECTED
1. Persistent Pupillary Meml			iris cornea	11. Entropion/Trichiasis	—		
Persistent Hyperpl.Tunica Lentis/Primary Vitreous (P	Nasculosa HTVL/PHPV)		grade 1 grade 2-6	12. Ectropion/Macroblepharon			
3. Cataract (congenital)			(multi)focal	13. Distichiasis /Ectopic cilia			
4. Retinal Dysplasia (RD)	+		geographical total	14. Corneal dystrophy			cortical post, pol.
5. Hypoplastic-/Micro-papilla			choroid. hypoplasia	15. Cataract (non-congenital)			ant sut. I.
6. Collie Eye Anomaly (CEA)	tahama t		coloboma other:	16. Lens luxation (primary)			nucleus
7. Other: Eyelid co	iopoma_		mild	17. Retinal degeneration (PRA) 🗖		
8: IridoComeal Angle Abnor	mality. (ICAA)		moderate severe	18. Other:			
Interpretation							
				es (KP-HED) specified, whereas "aff	ected" sig	nifies that the	ere is such evidence.
** The animal displays clinical for				inconclusive. Il confirm the diagnosis. Reexamina	tion in	months	

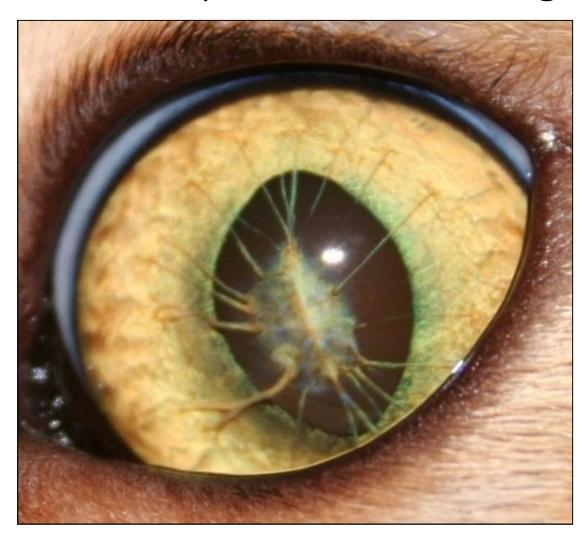
- "Coloboma: congenital defect of a portion of the eye due to a failure in closure of the body halves; most frequently affecting the iris or the optic nerve at the 6 o'clock position.
- For coloboma in eyelid, retina, choroid, sclera or optic nerve/papilla use the anatomical name first then the anomaly, e.g. eyelid coloboma.

HED Manual Ch. 6 Guidelines

Tick no 7. **Other**: known and presumed hereditary eye anomalies (congenital/developmental, non-progressive) are mentioned here.

"The terminology for the diseases is given in chapter 5. Definitions of this manual are to be used: **eyelid coloboma**.

Bengale, 1yo, Female. Left eye, Bilateral asymmetrical finding



Bengale, 1yo, Female, Left eye, Bilateral asymmetrical finding

Descriptive comments:					8. I	CAA: PLA	mild
						\	moderate
							severe
						ICA <	narrow (moderate)
Eye disease no.	🗆 m	ild	severe			(width)	closed (severe)
Results for the known or presumed	l hereditar	y eye diseas	es (KP-HED):	Results valid for 12 mon	ths		
	UNAFFECTED	UNDETERMINED	AFFECTED		UNAFFECTED	SUSPICIOUS	AFFECTED *
1. Persistent Pupillary Membrane (PPM)			iris cornea lens lamina	11. Entropion/Trichiasis	ф		
 Persistent Hyperpl.Tunica Vasculosa Lentis/Primary Vitreous (PHTVL/PHPV) 	ф		grade 1 grade 2-6	12. Ectropion/Macroblepharon			
3. Cataract (congenital)			(multi)focal	13. Distichiasis /Ectopic cilia			
4. Retinal Dysplasia (RD)			geographical	14. Corneal dystrophy			cortical post, pol.
5. Hypoplastic-/Micro-papilla			choroid. hypoplasia	15. Cataract (non-congenital)			ant sut. I.
6. Collie Eye Anomaly (CEA)			coloboma other:	16. Lens luxation (primary)			nucleus
7. Other:	ф —		mild	17. Retinal degeneration (PRA) 🖶		
8. IridoComeal Angle Abnormality. (ICAA) 🔲		severe	18. Other:	ф		
Interpretation					'		
 * "Unaffected" signifies that there is no clinic ** The animal displays clinical features that c 					ected" si	gnifies that th	nere is such evidence.
*** The animal displays clinical features that c					tion in	months.	

Persistent pupillary membrane (PPM): **blood vessel remnants of the embryological vascular network** in the anterior chamber **fail to regress** which normally occurs during the first 4 to 5 weeks of life.

may be found on the surface of the **iris at the collarette**, on the **lens capsule** or against the **corneal endothelium** or strands may bridge from iris to iris, iris to cornea, iris to lens, with or without sheets of tissue (**lamina**) in the anterior chamber.

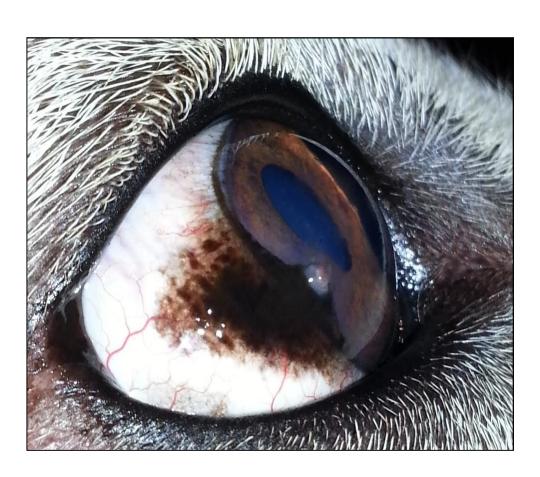
HED Manual Ch. 6 Guidelines

Tick no 1 "affected": **Persistent pupillary membrane** (PPM) and tick also the **respective box of other parts involved**.

Areas which can be involved:

- "retrocorneal: boxes PPM and cornea
- "strands from cornea to iris: boxes: PPM, cornea and iris
- " strands iris to iris: boxes PPM and iris
- "Strands iris to lens: boxes: PPM, iris and lens,
- "connected to areas of cataract: tick also no 3 for congenital cataract
- "strands connected to a sheet/"spider web" of tissue in the anterior chamber: boxes PPM, lamina and other parts involved are ticked

White Swiss Shepherd dog, 7yo, Female, bilateral OD OS





White Swiss Shepherd dog, 7yo, Female, bilateral

Descriptive comments:						8. 10	AA: PLA 🦯	mild	
							\	mode	rate
								severe	è
							ICA <	— narrov	w (moderate)
Eye disease no.	🗀 mi	ld	severe				(width)	closed	d (severe)
Results for the known or presum	ed hereditar	y eye diseas	es (KP-HED):		Results valid for 12 mo	nths			
	UNAFFECTED	** UNDETERMINED	* AFFECTED			UNAFFECTED	*** SUSPICIOUS	AFFECTED	
1. Persistent Pupillary Membrane (PP	м) 🗀		iris	cornea lamina	11. Entropion/Trichiasis	ф			
 Persistent Hyperpl.Tunica Vasculo Lentis/Primary Vitreous (PHTVL/PHP) 	sa 🗖		grade		12. Ectropion/Macroblepharo	n 🛱			
3. Cataract (congenital)			(multi)focal	13. Distichiasis /Ectopic cilia				
4. Retinal Dysplasia (RD)				aphical	14. Corneal dystrophy	—			cortical
5. Hypoplastic-/Micro-papilla				d. hypoplasia	15. Cataract (non-congenital)) 🖶			post. pol. ant sut. I.
6. Collie Eye Anomaly (CEA)			colobe	oma	16. Lens luxation (primary)				punctata
7. Other:			mild		17. Retinal degeneration (PR	(A)			other
8. IridoComeal Angle Abnormality. (ic	AA)		mode sever		18. Other: CSK/Pannu	IS			
Interpretation					,				
* "Unaffected" signifies that there is no cli			•			affected" sig	nifies that th	nere is such o	vidence.
** The animal displays clinical features that	t could possibl	y fit the KP-HE	ED mentioned, but th	e changes are	inconclusive.				

*** The animal displays minor, but specific clinical signs of the KP-HED mentioned. Further development will confirm the diagnosis. Reexamination inmonths.

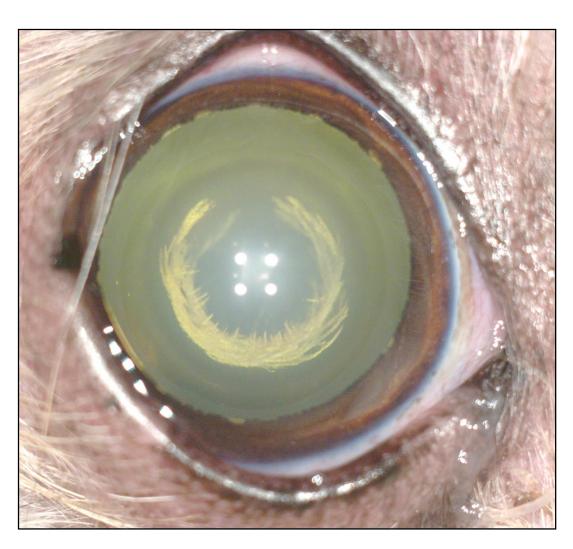
- "Chronic superficial keratitis(CSK)/Pannus: Presumed hereditary eye disease; bilateral inflammatory disease of the cornea usually starting as a greyish haze at the inferior or inferiotemporal cornea, followed by the formation of a vascularized subepithelial opacity spreading towards the central cornea; pigmentation follows the vascularization.
- The disease can be seen with concurrent plasmoma (=plasmocytic infiltration of the external conjunctiva of the 3rd eyelid) and/or medial canthus erosion.

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Tick no 18. Other: Chronic superf. Keratitis/Pannus

for abnormalities, which are considered not to be congenital/developmental or which are progressive, and not yet named on the form

Bichon Frisé, 7yo, Male, unilateral, Right eye. 1st examination



Bichon Frisé, 7yo, Male, unilateral. Right eye. 1st examination

Descriptive comments:						8. 10	CAA: PLA	mild
							\	moderate
								severe
							ICA 🗨	narrow (moderate)
Eye disease no.	🗀 m	ild	sev	ere			(width)	closed (severe)
Results for the known or presumed	heredita	ry eye diseas	es (KP-HE	D):	Results valid for 12 mo	nths		
	UNAFFECTED	** UNDETERMINED	AFFECTED			UNAFFECTED	*** SUSPICIOUS	AFFECTED *
1. Persistent Pupillary Membrane (PPM)	ф			iris cornea	11. Entropion/Trichiasis	+		
 Persistent Hyperpl.Tunica Vasculosa Lentis/Primary Vitreous (PHTVL/PHPV) 	ф			grade 1 grade 2-6	12. Ectropion/Macroblepharo	n 📥		
3. Cataract (congenital)	ф			(multi)focal	13. Distichiasis /Ectopic cilia			
4. Retinal Dysplasia (RD)	ф			geographical total	14. Corneal dystrophy			cortical post, pol.
5. Hypoplastic-/Micro-papilla				choroid. hypoplasia	15. Cataract (non-congenital) 🗆		ant sut. I.
6. Collie Eye Anomaly (CEA)				coloboma other:	16. Lens luxation (primary)			nucleus
7. Other:	ф_			mild	17. Retinal degeneration (PF	RA) 🗀		
8. IndoComeal Angle Abnormality. (ICAA))			severe	18. Other:	中		
Interpretation								
 * "Unaffected" signifies that there is no clinical ** The animal displays clinical features that contains the significant of the significan						affected" sig	inifies that th	nere is such evidence.
*** The animal displays clinical reatures that co	•	•		_		nation in	months.	

- "Cataract: any hereditary or non-hereditary, congenital or acquired, non-physiological opacity of the lens and/or its capsule.
- "All bilateral or unilateral cataracts and especially cortical cataracts are known and presumed hereditary eye diseases

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Tick no 15: **Cataract**: To describe the type of cataract, the general box for cataract and, if available, the **specifying box for the type of cataract** should be ticked.

- "If cataracts are observed in the period between birth and the 8th week of age the entity is ticked as congenital (no 3)
- "Cataracts diagnosed at **older age** are ticked as **non-congenital (acquired)**, no 15
- "It is strongly recommended to **draw the cataract** in the "predrawings" on the certificate.

English Springer Spaniel, 5yo, Female, bilateral



English Springer Spaniel, 5yo, Female, bilateral

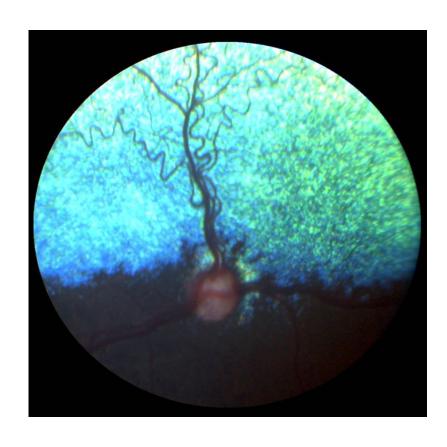
Descriptive comments:					8. IC/	AA: PLA 🦯	mild mild
						\	moderate
							severe
						ICA 🖯	- narrow (moderate)
Eye disease no.	. 🗀 mi	ld	severe			(width)	closed (severe)
Results for the known or presumed	hereditar	y eye diseas	es (KP-HED):	Results valid for 12 months	5		
·	* UNAFFECTED	** UNDETERMINED	*		*	*** SUSPICIOUS	* AFFECTED
1. Persistent Pupillary Membrane (PPM)	ф			ornea mina 11. Entropion/Trichiasis [†		
 Persistent Hyperpl.Tunica Vasculosa Lentis/Primary Vitreous (PHTVL/PHPV) 			grade 1 grade 2-6	12. Ectropion/Macroblepharon	+		
3. Cataract (congenital)	\Box		(multi)focal	13. Distichiasis /Ectopic cilia	+		
4. Retinal Dysplasia (RD)			geographical	14. Corneal dystrophy	+		cortical post, pol.
5. Hypoplastic-/Micro-papilla			choroid. hypopi	15. Cataract (non-congenital)	+		ant sut. I.
6. Collie Eye Anomaly (CEA)			coloboma other:	16. Lens luxation (primary)			nucleus
7. Other:			mild	17. Retinal degeneration (PRA)	+		
8. IridoComeal Angle Abnormality. (ICAA)			severe	18. Other:	+		
Interpretation							
 * "Unaffected" signifies that there is no clinical ** The animal displays clinical features that contains the significant of the significan					ted" sign	nifies that th	ere is such evidence.
*** The animal displays minor but specific clini		•			n in I	months	

- **Retinal dysplasia**: presumed hereditary eye disease; abnormal development of the retina <u>observed early in life</u>: **neuroretinal folding(s), rosettes and partial or total retinal detachment**; non-progressive and generally recognized to have three forms: (multi)focal, geographic and total.
- **Retinal dysplasia geographical**: any irregularly, horseshoeor bladder-like shaped area of abnormal retinal development, most often in the central part of the tapetal area, in close association with the dorsal retinal vasculature, containing both areas of thinning and areas of elevation representing focal retinal detachment and areas of retinal disorganization. This form may be associated with vision impairment.

Tick no 4: Retinal dysplasia and geographical

Miniature Dachshund, 3yo, Female, visual both eyes OD





Miniature Dachshund, 3yo, Female, visual both eyes. Mild anisocoria

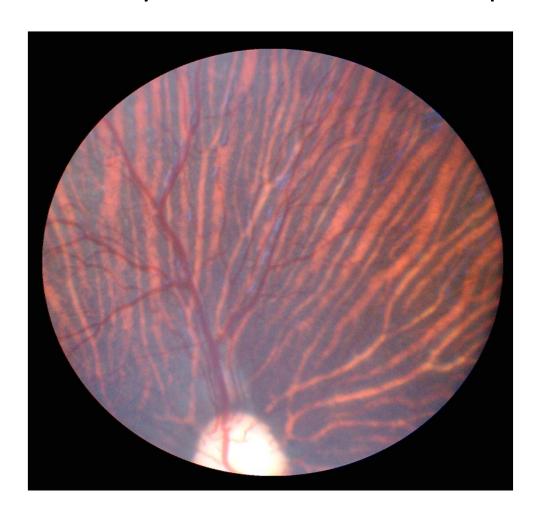
Descriptive comments:								8. IC	AA: PLA 🦯	mild	
								•••	\	moderate	e
										severe	
									ICA 💳	— narrow (n	noderate
Eye disease no		mild		□ sev	vere				(width)	closed (se	evere)
Results for the kno	wn or presumed	hereditary (eye diseas	es (KP-HE	ED):		Results valid for 12 month	hs			
	L	NAFFECTED U	** NDETERMINED	AFFECTED			U	NAFFECTED	*** SUSPICIOUS	AFFECTED	
1. Persistent Pupillary N	Membrane (PPM)	ф			iris cornea	11.	Entropion/Trichiasis	ф			
Persistent Hyperpl.Tu Lentis/Primary Vitreo	unica Vasculosa us (PHTVL/PHPV)				grade 1 grade 2-6	12	. Ectropion/Macroblepharon				
3. Cataract (congenital)					(multi)focal	13	. Distichiasis /Ectopic cilia	\Box			
4. Retinal Dysplasia (RD)	ф			geographical	14	. Corneal dystrophy				cortical
5. Hypoplastic-/Micro-pa	apilla			X	choroid. hypoplasia	15	. Cataract (non-congenital)	+			ant sut.
6. Collie Eye Anomaly (CEA)	\Box			coloboma other:	16	. Lens luxation (primary)				punctata nucleus
7. Other:					mild	17	. Retinal degeneration (PRA)				other
8. IridoComeal Angle Al	onormality. (ICAA)				moderate severe	18	. Other:				
Interpretation								ı			
_				•			KP-HED) specified, whereas "affe	ected" sig	nifies that th	ere is such evid	dence.
** The animal displays clin	ical features that co	uld possibly f	it the KP-HE	D mentione	ed, but the changes are	e inc	conclusive.				

*** The animal displays minor, but specific clinical signs of the KP-HED mentioned. Further development will confirm the diagnosis. Reexamination inmonths.

- "Hypoplasia: defective development of an organ or part resulting in a smaller than normal size or immature state
- "Optic disc hypoplasia: presumed hereditary eye disease; congenital failure of development of the optic nerve which causes visual deficiency and abnormal pupil response in the affected eye.
- "Micropapilla: small optic disc which is not associated with vision impairment.

Tick no 5: Hypoplastic-/Micropapilla

Rough Collie, 8yo, Male, bilateral presentation



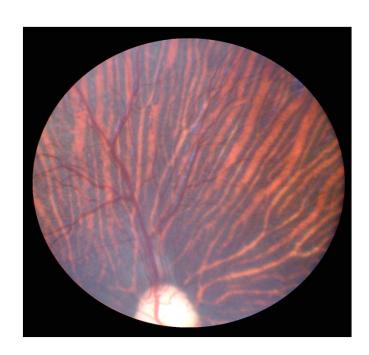
Rough Collie, 8yo, Male, bilateral finding

Descriptive comments:						8. 10	CAA: PLA	mild	
							\	moderate	
								severe	
							ICA 💳	- narrow (moderat	te)
Eye disease no.	🗆 m	nild		severe			(width)	closed (severe)	
Results for the known or presume	l heredita	ry eye diseas	es (KP-	-HED):	Results valid for 12 mor	ths			
	UNAFFECTED	** UNDETERMINED	AFFECTED			UNAFFECTED	*** SUSPICIOUS	AFFECTED	
1. Persistent Pupillary Membrane (PPM)	ф		\square	iris cornea	11. Entropion/Trichiasis				
 Persistent Hyperpl.Tunica Vasculosa Lentis/Primary Vitreous (PHTVL/PHPV) 			\square	grade 1 grade 2-6	12. Ectropion/Macroblepharon				
3. Cataract (congenital)				(multi)focal	13. Distichiasis /Ectopic cilia				
4. Retinal Dysplasia (RD)	ф		\sqsubseteq	geographical	14. Corneal dystrophy			cortice	
5. Hypoplastic-/Micro-papilla	+			choroid. hypoplasia	15. Cataract (non-congenital)	ф		ant su	ıt. I.
6. Collie Eye Anomaly (CEA)	中		\sqsubset	coloboma other:	16. Lens luxation (primary)	ф		nucleu	
7. Other:	ф			mild	17. Retinal degeneration (PRA	N) 🗖			
8. IridoComeal Angle Abnormality. (ICAA	.) 🗆			mederate severe	18. Other:				
Interpretation									
4. III la affa ata alli al ancifi a atlant tilanna la manalinia		f th 1			(VD HED) (GI II II II II II	Y 4 111 - 1		and the second and decrease	

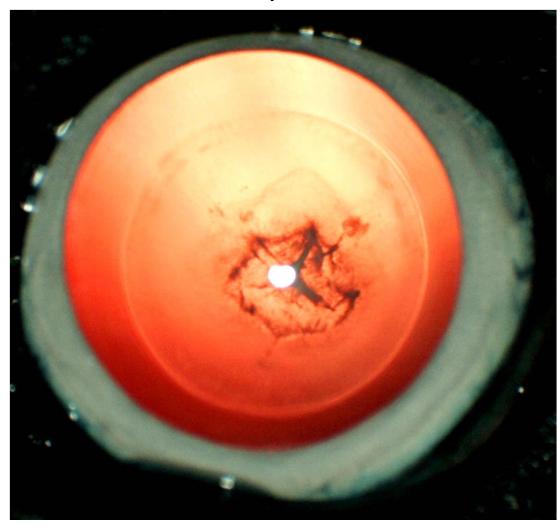
- * "Unaffected" signifies that there is no clinical evidence of the known or presumed hereditary eye diseases (KP-HED) specified, whereas "affected" signifies that there is such evidence
- ** The animal displays clinical features that could possibly fit the KP-HED mentioned, but the changes are inconclusive.
- *** The animal displays minor, but specific clinical signs of the KP-HED mentioned. Further development will confirm the diagnosis. Reexamination inmonths.

HED Manual Ch. 5 Definitions - Guidelines

"Normal fundus



Siberian Husky, 11month old, Female, bilateral/symmetrical



Siberian Husky, 11month old, Female, bilateral/symmetrical

Descriptive comments:		-		8. ICAA: PLA	mild
				\	moderate
					severe
				ICA 🗲	- narrow (moderate)
Eye disease no.	. mild	severe severe		(width)	closed (severe)
Results for the known or presumed	hereditary eye dis	eases (KP-HED):	Results valid for 12 months		
t	UNAFFECTED UNDETERM	NED AFFECTED	UNAF	* *** FRECTED SUSPICIOUS	AFFECTED
1. Persistent Pupillary Membrane (PPM)	+ -	iris cornea	11. Entropion/Trichiasis	+ -	
 Persistent Hyperpl.Tunica Vasculosa Lentis/Primary Vitreous (PHTVL/PHPV) 		grade 1 grade 2-6	12. Ectropion/Macroblepharon	- -	
3. Cataract (congenital)		(multi)focal	13. Distichiasis /Ectopic cilia	+ -	
4. Retinal Dysplasia (RD)		geographical	14. Corneal dystrophy	- -	cortical post, pol.
5. Hypoplastic-/Micro-papilla		choroid. hypoplasia	15. Cataract (non-congenital)	· -	ant sut. I.
6. Collie Eye Anomaly (CEA)	+ -	coloboma other:	16. Lens luxation (primary)	+ -	nucleus
7. Other:		mild	17. Retinal degeneration (PRA)	- -	U one
8. IridoComeal Angle Abnormality. (ICAA)		moderate severe	18. Other:	+ -	
Interpretation					

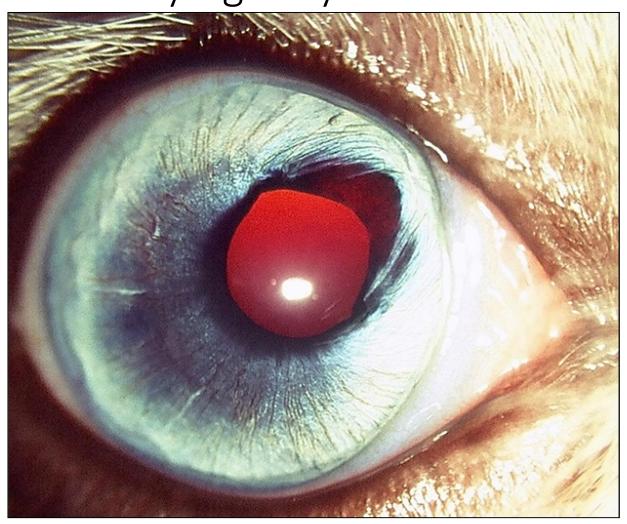
- * "Unaffected" signifies that there is no clinical evidence of the known or presumed hereditary eye diseases (KP-HED) specified, whereas "affected" signifies that there is such evidence.
- ** The animal displays clinical features that could possibly fit the KP-HED mentioned, but the changes are inconclusive.
- *** The animal displays minor, but specific clinical signs of the KP-HED mentioned. Further development will confirm the diagnosis. Reexamination inmonths.

- "Cataract: any hereditary or non-hereditary, congenital or acquired, non-physiological opacity of the lens and/or its capsule.
- "All bilateral or unilateral cataracts and especially cortical cataracts are known and presumed hereditary eye diseases except in cases known to be associated with trauma, other causes of ocular inflammation, metabolic disease, nutritional deficiencies, persistent pupillary membrane, persistent hyaloid artery or old age.

Tick no 15: Cataract: post. polar & cortical

- To describe the type of cataract, if available, the **specifying** box for the type of cataract should be ticked.
- "It is strongly recommended to **draw the cataract** in the "predrawings" on the certificate.

Australian Shepherd, 1yo, Female Only right eye affected



Australian Shepherd, 1yo, Female Only right eye affected

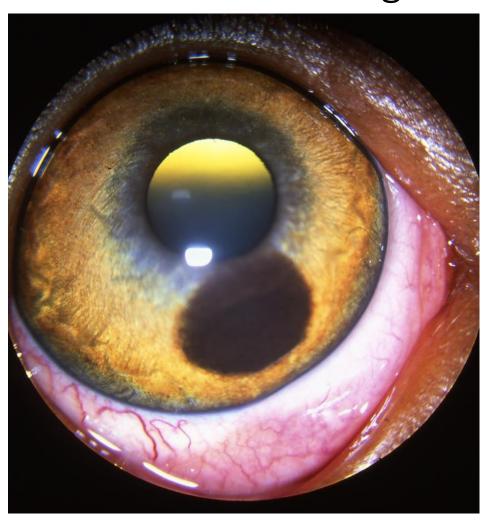
Descriptive comments:					8. 1	CAA: PLA 🦯	mild	
						\	moder moder	rate
							severe	•
						ICA 💳	- narrow	v (moderate)
Eye disease no.	🗀 mi	ld	severe			(width)	closed	(severe)
Results for the known or pres	umed hereditar	y eye diseas	es (KP-HED):	Results valid for 12 mon	ths			
	UNAFFECTED	** UNDETERMINED	* AFFECTED		UNAFFECTED	*** SUSPICIOUS	AFFECTED	
1. Persistent Pupillary Membrane	(PPM)		iris cornea	11. Entropion/Trichiasis	\Box			
Persistent Hyperpl.Tunica Vasc Lentis/Primary Vitreous (PHTVL/P	ulosa		grade 1 grade 2-6	12. Ectropion/Macroblepharon				
3. Cataract (congenital)	+		(multi)focal	13. Distichiasis /Ectopic cilia				
4. Retinal Dysplasia (RD)	—		geographical	14. Corneal dystrophy				cortical post. pol.
5. Hypoplastic-/Micro-papilla	+		choroid. hypoplasia	15. Cataract (non-congenital)				ant sut. I.
6. Collie Eye Anomaly (CEA)	. 中		coloboma other:	16. Lens luxation (primary)				nucleus
7. Other: Iris hypoplas			mild	17. Retinal degeneration (PRA	N) 🛱			Other
8 IridoComeal Angle Abnormality.	(ICAA)		moderate severe	18. Other:	+			
Interpretation								
A 111 I 66 - A 111 - I 161 A I A AI I	- Part - I and I am a	- C 41 1		(VD HED) (CI I II-(C4111 -1-			

- * "Unaffected" signifies that there is no clinical evidence of the known or presumed hereditary eye diseases (KP-HED) specified, whereas "affected" signifies that there is such evidence
- ** The animal displays clinical features that could possibly fit the KP-HED mentioned, but the changes are inconclusive.
- *** The animal displays minor, but specific clinical signs of the KP-HED mentioned. Further development will confirm the diagnosis. Reexamination inmonths.

- "Hypoplasia: defective development of an organ or part of it resulting in a smaller than normal size or immature state
- "Hypoplasia iris: presumed hereditary eye disease characterized by congenital absence of iris (sphincter) tissue. It may be a separate disorder or associated with other ocular malformations.

Tick no 7: Iris hypoplasia

Labrador Retriever, 6yo, Female, right eye, unilateral finding



Labrador Retriever, 6yo, Female, right eye, unilateral finding

Descriptive comments:				8. ICAA: PLA 🦯	mild
					moderate
					severe
				· ICA —	narrow (moderate)
Eye disease no.	. I mild	severe severe		(width)	closed (severe)
Results for the known or presumed	hereditary eye dis	seases (KP-HED):	Results valid for 12 months	S	
1	UNAFFECTED UNDETERM	INED AFFECTED	UNA	FFECTED SUSPICIOUS	AFFECTED
1. Persistent Pupillary Membrane (PPM)	+ -	iris cornea	11. Entropion/Trichiasis	+ -	
 Persistent Hyperpl.Tunica Vasculosa Lentis/Primary Vitreous (PHTVL/PHPV) 		grade 1 grade 2-6	12. Ectropion/Macroblepharon	+ -	
3. Cataract (congenital)		(multi)focal	13. Distichiasis /Ectopic cilia	+ -	
4. Retinal Dysplasia (RD)		geographical	14. Corneal dystrophy		contical post. pol.
5. Hypoplastic-/Micro-papilla		choroid. hypoplasia	15. Cataract (non-congenital)	+	ant sut. I.
6. Collie Eye Anomaly (CEA)		coloboma other:	16. Lens luxation (primary)		nucleus
7. Other:		mild	17. Retinal degeneration (PRA)		
8. IridoComeal Angle Abnormality. (ICAA)		moderate severe	18. Other: Iris melanoma	·	×
Interpretation					▼ ▼

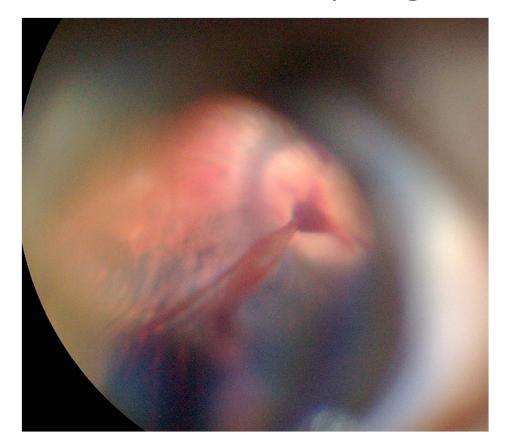
- * "Unaffected" signifies that there is no clinical evidence of the known or presumed hereditary eye diseases (KP-HED) specified, whereas "affected" signifies that there is such evidence.
- ** The animal displays clinical features that could possibly fit the KP-HED mentioned, but the changes are inconclusive.
- *** The animal displays minor, but specific clinical signs of the KP-HED mentioned. Further development will confirm the diagnosis. Reexamination inmonths.

Melanoma iris: presumed hereditary eye disease,

- " a locally invasive cancer of melanocyte (pigment) cell **origin** within the iris.
- "Occurs with a higher than normal incidence in the **Labrador** retriever.
- "Left untreated it may result in secondary glaucoma.

Tick no 18. Other:Iris melanoma

Shetland sheepdog, 3mo, Male, right&left eye





Shetland sheepdog, 3mo, Male. right & left eye

Descriptive comments:					8. ICAA: PLA 🦯	mild
					\	moderate moderate
						severe
<u></u>					ICA <	
Eye disease no.	🗆 m	ild	severe		(width)	closed (severe)
Results for the known or pres	sumed hereditar	y eye diseas	es (KP-HED):	Results valid for 12 montl	hs	
	UNAFFECTED	** UNDETERMINED	AFFECTED *	U	* *** NAFFECTED SUSPICIOUS	AFFECTED
1. Persistent Pupillary Membrane	(PPM)		iris cornea	11. Entropion/Trichiasis	+ -	
Persistent Hyperpl.Tunica Vaso Lentis/Primary Vitreous (PHTVL/I	culosa ————————————————————————————————————		grade 1 grade 2-6	12. Ectropion/Macroblepharon		
3. Cataract (congenital)	+		(multi)focal	13. Distichiasis /Ectopic cilia		
4. Retinal Dysplasia (RD)	+		geographical	14. Corneal dystrophy		cortical
5. Hypoplastic-/Micro-papilla			choroid. hypoplasia	15. Cataract (non-congenital)		post. pol. ant sut. I.
6. Collie Eye Anomaly (CEA)			coloboma	16. Lens luxation (primary)		punctata
7. Other: Hyaloid artery, p	ersist.		mild	17. Retinal degeneration (PRA)		other
8. IridoComeal Angle Abnormality	: (ICAA)		moderate severe	18. Other:		
Interpretation						

- * "Unaffected" signifies that there is no clinical evidence of the known or presumed hereditary eye diseases (KP-HED) specified, whereas "affected" signifies that there is such evidence.
- ** The animal displays clinical features that could possibly fit the KP-HED mentioned, but the changes are inconclusive.
- *** The animal displays minor, but specific clinical signs of the KP-HED mentioned. Further development will confirm the diagnosis. Reexamination inmonths.

Persistent hyaloid artery (PHA): congenital defect resulting from abnormalities in the development and regression of the hyaloid artery.

The blood vessel remnant can be present in the vitreous as a small patent vascular strand (PHA) or as a non-vascular strand that appears grey-white (persistent hyaloid remnant)

Tick no 7: Other, Hyaloid artery, persistent: affected, severe

"known and presumed hereditary eye anomalies (congenital/developmental, non-progressive) are mentioned here. The terminology for the diseases is given in chapter 5. Definitions of this manual are to be used: **Hyaloid artery**, persistent

"Only if there is a Mittendorf's dot with signs of capsular cataract and/or a Bergmeister papilla with a patent vascular or non-vascular <u>fibrous strand in between them</u>, at number "7": Other: Persistent hyaloid artery is written and the box "affected" plus the box: "severe" in the comment area are ticked

German Shepherd, 5yo, Male, bilateral



German Shepherd, 5yo, Male, bilateral

Descriptive comments:						8. IC	AA: PLA	mild
							\	moderate
								severe
							ICA 🖯	- narrow (moderate
Eye disease no14	🗀 m i	ld	severe				(width)	closed (severe)
Results for the known or presume	d hereditar	y eye diseas	ses (KP-HED):		Results valid for 12 mor	nths		
	UNAFFECTED	** UNDETERMINED	AFFECTED			UNAFFECTED	*** SUSPICIOUS	AFFECTED
1. Persistent Pupillary Membrane (РРМ)			iris	cornea lamina	11. Entropion/Trichiasis			
2. Persistent Hyperpl.Tunica Vasculosa Lentis/Primary Vitreous (PHTVL/PHPV)	³ 📥		grade		12. Ectropion/Macroblepharor			
3. Cataract (congenital)			(multi	i)focal	13. Distichiasis /Ectopic cilia			
4. Retinal Dysplasia (RD)				raphical	14. Corneal dystrophy			cortical
5. Hypoplastic-/Micro-papilla				id. hypoplasia	15. Cataract (non-congenital)			post. po ant sut.
6. Collie Eye Anomaly (CEA)			colob	oma	16. Lens luxation (primary)			punctat
7. Other:	ф		mild		17. Retinal degeneration (PR	A) 🗀		other
8. IridoComeal Angle Abnormality. (ICA	A)		mode sever		18. Other: CSK/Pannu	ıs _□		
Interpretation								• •
* "Unaffected" signifies that there is no clini						ffected" sig	nifies that th	nere is such evidence.
** The animal displays clinical features that	could possibl	y fit the KP-Hi	ED mentioned, but th	ne changes are	inconclusive.			

*** The animal displays minor, but specific clinical signs of the KP-HED mentioned. Further development will confirm the diagnosis. Reexamination inmonths.

- "Corneal dystrophy: presumed hereditary eye disease; noninflammatory corneal opacity in one or more of the corneal layers (epithelium, stroma, endothelium), usually bilateral not always symmetrical. The onset in one eye may precede the other
- "Chronic superficial keratitis(CSK)/Pannus: Presumed hereditary eye disease; bilateral inflammatory disease of the cornea starting as a greyish haze at the inferior or inferiotemporal cornea, followed by a vascularized subepithelial opacity spreading towards the central cornea; pigmentation follows the vascularization. Vision impairment occurs, if severe.
- "The disease can be seen with concurrent plasmoma and/or medial canthus erosion.

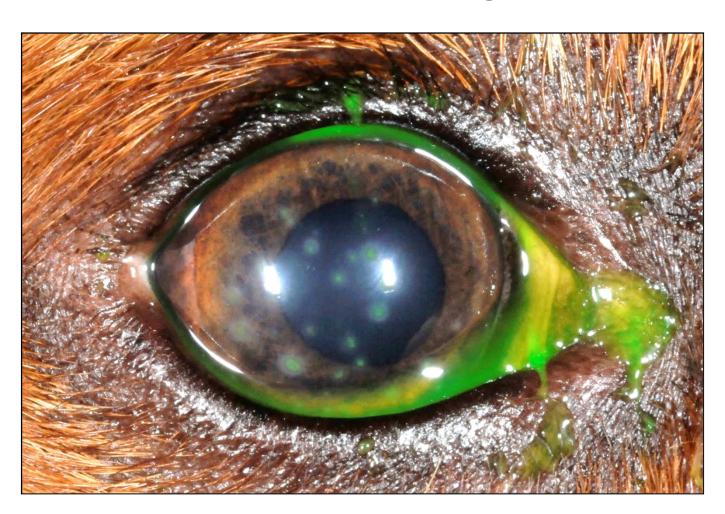
Tick no 14: Corneal dystrophy, severe

tick: "severe' in the comment area: Only if visual impairment, or endothelial or macular dystrophy are recognized

"Tick no 18. Other: Chronic superficial keratitis (CSK)/Pannus:

The available name of the disease in the list of 'Definitions' of this Manual (see chapter 5) is used: **Chronic superficial keratitis (CSK)/Pannus**

Dachshund longhaired red , 5yo, Female, bilateral findings



Dachshund, longhaired red 5yo, Female, bilateral findings

Descriptive comments:					8. IC	AA: PLA 🦯	mild	
						\	moderate	
							severe	
						ICA 💳	- narrow (moderate)	
Eye disease no	🗆 mi	ld	severe severe			(width)	closed (severe)	
Results for the known or p	resumed hereditary	y eye diseas	es (KP-HED):	Results valid for 12 mo	onths			
	UNAFFECTED	** UNDETERMINED	* AFFECTED		UNAFFECTED	*** SUSPICIOUS	AFFECTED *	
1. Persistent Pupillary Membra	ne (PPM)		iris cornea	11. Entropion/Trichiasis				
 Persistent Hyperpl.Tunica Value Lentis/Primary Vitreous (PHT) 	asculosa VL/PHPV)		grade 1 grade 2-6	12. Ectropion/Macroblepharo	n 🗀			
3. Cataract (congenital)			(multi)focal	13. Distichiasis /Ectopic cilia				
4. Retinal Dysplasia (RD)			geographical	14. Corneal dystrophy			contical post. pol.	
5. Hypoplastic-/Micro-papilla			choroid. hypoplasia	15. Cataract (non-congenital) 🛱		ant sut. I.	
6. Collie Eye Anomaly (CEA)			coloboma other:	16. Lens luxation (primary)			nucleus	
7. Other:			mild	17. Retinal degeneration (PR	RA) 🗀		U outer	
8: IridoComeal Angle Abnorma	lity. (ICAA)		moderate severe	Keratitis, 18. Other: Punctate	🗀		*	
Interpretation				Punctate				
* "Unaffected" signifies that there is no clinical evidence of the known or presumed hereditary eye diseases (KP-HED) specified, whereas "affected" signifies that there is such evidence. ** The animal displays clinical features that could possibly fit the KP-HED mentioned, but the changes are inconclusive.								
"" The animal displays cliffical leatt	ireo iriai coulu possibi	y 111. UTO TXF-FIE	LD memorieu, but the changes at	e illooliolasive.				

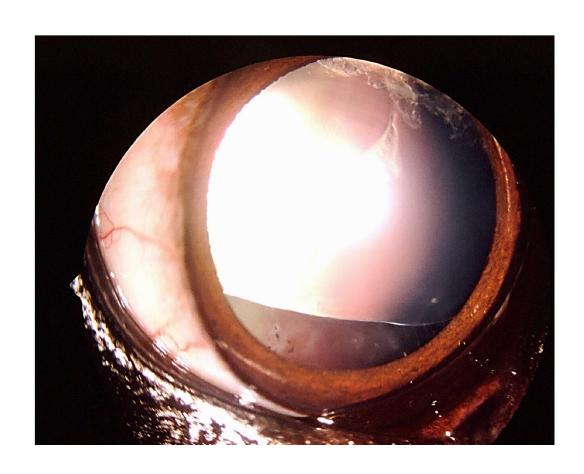
*** The animal displays minor, but specific clinical signs of the KP-HED mentioned. Further development will confirm the diagnosis. Reexamination inmonths.

"Keratitis, punctate: presumed hereditary eye disease; inflammation of the cornea accompanied by multiple small areas of corneal ulceration

Tick no 18. Other: and Keratitis, Punctate

The available name of the disease can be found in the list of 'Definitions' of this Manual (see chapter 5) and is used: **Keratitis, Punctate**

Labrador Retriever, 1yo, Female, right eye unilateral finding



Labrador Retriever, 1yo, Female, right eye unilateral finding

Descriptive comments:					8. ICAA: PL	.A mild
						moderate moderate
						severe
					IC	A narrow (moderate)
Eye disease no.	🗀 m	ild	severe		(w	idth) closed (severe)
Results for the known or presumed	l hereditar	y eye diseas	es (KP-HED):	Results valid for 12 months	5	
	UNAFFECTED	** UNDETERMINED	* AFFECTED	UNA	FFECTED SUSPIC	
1. Persistent Pupillary Membrane (PPM)			iris cornea	11. Entropion/Trichiasis	+ -	
Persistent Hyperpl.Tunica Vasculosa Lentis/Primary Vitreous (PHTVL/PHPV)			grade 1 grade 2-6	12. Ectropion/Macroblepharon		
3. Cataract (congenital)			(multi)focal	13. Distichiasis /Ectopic cilia	+ -	
4. Retinal Dysplasia (RD)			geographical	14. Corneal dystrophy	+ -	cortical
5. Hypoplastic-/Micro-papilla			choroid. hypoplasia	15. Cataract (non-congenital)		post. pol. ant sut. I.
6. Collie Eye Anomaly (CEA)			coloboma	16. Lens luxation (primary)	+ -	punctata
7. Other: lens hypoplasia			other:	17. Retinal degeneration (PRA)		other
8. IridoComeal Angle Abnormality. (ICAA)		moderate	18. Other:		
Interpretation					•	
* "Unaffected" signifies that there is no clinic					ted" signifies t	that there is such evidence.

*** The animal displays minor, but specific clinical signs of the KP-HED mentioned. Further development will confirm the diagnosis. Reexamination inmonths.

"Hypoplasia lens: presumed hereditary eye disease characterized by congenital incomplete formation of the lens equator, sometimes called lens coloboma. See and use lens hypoplasia

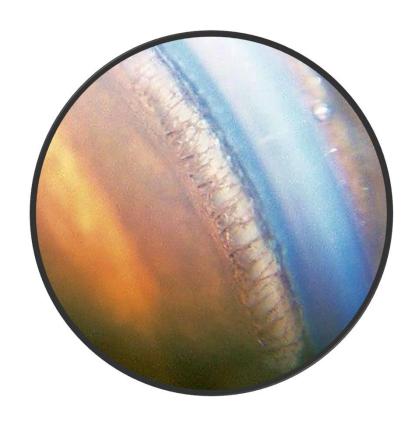
Tick no 7: Other: lens hypoplasia & no 15: cataract, cortical

The terminology for the diseases is given in chapter 5. Definitions of this manual and are to be used: **lens hypoplasia** and cataract

HED session: Gonioscopy

Antwerp 2019





Grading of ICAA

PLA

" 0 – 50% Fib.latae = unaffected

">50-100% Fib.latae and/or < 25% Laminae = affected (mild)

" 25-50% Laminae = affected (moderate)

" > 50% Laminae = affected (severe)

ICA width

ВА

Ratio A/B: Terminology: PL not visible closed

affected (severe)

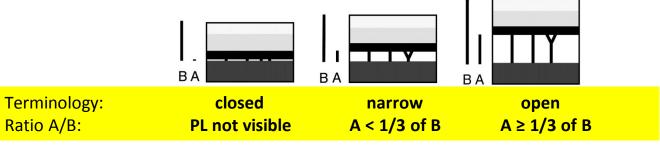


A < 1/3 of B narrow affected (moderate)



A ≥ 1/3 of B open normal "Fibrae latae (FL) = fibres with confluent (broad) base and shortened thin insertions at the cornea or thick fibres (< 5 fibres)

"Laminae (LA) = plates or sheets of continous tissue (> 5 fibres), with or without flow holes



Comparison between 2 distances:

A = length of PL

B = distance from the origin of the PL to the anterior surface of the cornea at the transection area

C = Pupil

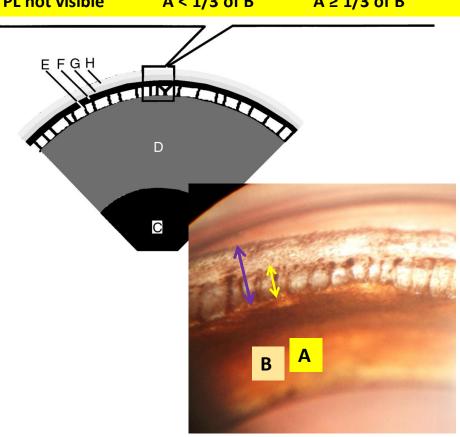
D = Iris

E = PL

F = inner/deep pigment band

G = outer/superficial pigment band

H = corneal transection



		ا . ا						
ľ	***************************************		*************				AA: PLA	mild moderate severe narrow (moderate)
	Eye disease no.	□ mild		□ severe			(width)	closed (severe)
	Results for the known or presumed h	*	**	*	Results valid for 12 mont	*	XXX	
	u	NAFFECTED UNI	DETERMINED	AFFECTED	U	NAFFECTED	SUSPICIOUS	AFFECTED
	1. Persistent Pupillary Membrane (PPM)			iris comea	11. Entropion/Trichiasis			
0.00	2. Persistent Hyperpl.Tunica Vasculosa Lentis/Primary Vitreous (PHTVL/PHPV)			grade 1 grade 2-6	12. Ectropion/Macroblepharon			
	3. Cataract (congenital)			(multi)focal	13. Distichiasis /Ectopic cilia			
	4. Retinal Dysplasia (RD)			geographical	14. Corneal dystrophy			cortical
0.00	5. Hypoplastic-/Micro-papilla			choroid. hypoplasia	15. Cataract (non-congenital)			post, pol.
	6. Collie Eye Anomaly (CEA)		-2	coloboma	16. Lens luxation (primary)			punctata nucleus
9	7. Other:			mild	17. Retinal degeneration (PRA)			other
	8. IridoCorneal Angle Abnormality. (ICAA)			moderate	18. Other:			
	Interpretation							

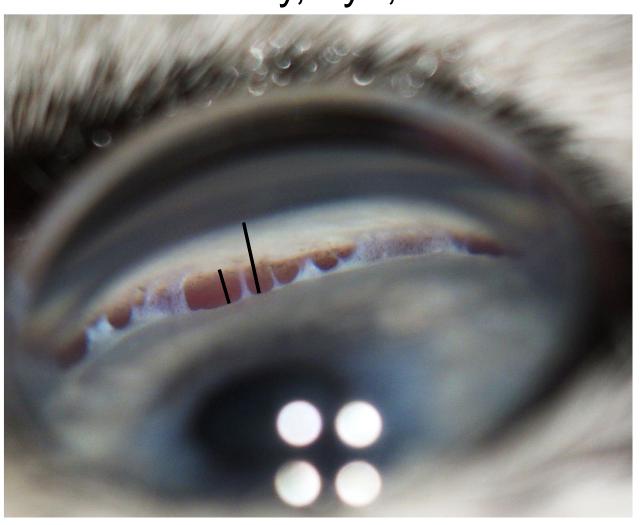
^{* &}quot;Unaffected" signifies that there is no clinical evidence of the known or presumed hereditary eye diseases (KP-HED) specified, whereas "affected" signifies that there is no clinical evidence of the known or presumed hereditary eye diseases (KP-HED) specified, whereas "affected" signifies that there is no clinical evidence of the known or presumed hereditary eye diseases (KP-HED) specified, whereas "affected" signifies that there is no clinical evidence of the known or presumed hereditary eye diseases (KP-HED) specified, whereas "affected" signifies that there is no clinical evidence of the known or presumed hereditary eye diseases (KP-HED) specified, whereas "affected" signifies that there is no clinical evidence. ** The animal displays clinical features that could possibly fit the KP-HED mentioned, but the changes are inconclusive.

^{***} The animal displays minor, but specific clinical signs of the KP-HED mentioned. Further development will confirm the diagnosis. Reexamination inmonths.

Each picture represents one quarter of the iridocorneal angle.

The rest of the iridocorneal angle is similar to the picture shown.

Case 1: Siberian Husky, 2yo, Male. Gonioscopy



Siberian Husky, 2yo, Male. Gonioscopy

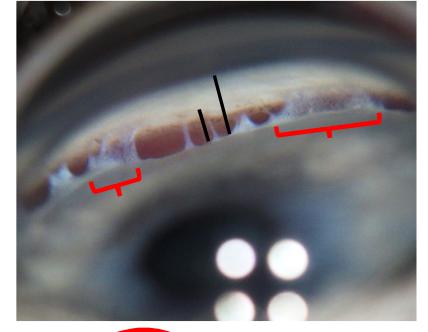
PLA

"0-50% FL = unaffected

" >50-100% FL and/or < 25% LA = affected (mild)

(25-50% LA = affected (moderate)

" > 50% LA = affected (severe)



ICA width

Ratio A/B: Terminology:

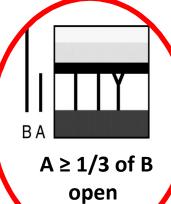


PL not visible closed affected (severe)



A < 1/3 of B narrow

affected (moderate)



normal

Siberian Husky, 2yo, Male. Gonioscopy

Descriptive comments:						8. 10	CAA: PLA 💳	mild	
	,						\	modera	ate
								severe	
							ICA 💳	— narrow	(moderate)
Eye disease no	🗀 mi	ild	severe				(width)	closed	(severe)
Results for the known or presu	med hereditar	y eye diseas	es (KP-HED):		Results valid for 12 mor	ths			
	*	** UNDETERMINED	*			UNAFFECTED	*** SUSPICIOUS	AFFECTED	
1. Persistent Pupillary Membrane (P	'PM)			cornea	11. Entropion/Trichiasis	\Box			
 Persistent Hyperpl.Tunica Vascul Lentis/Primary Vitreous (PHTVL/PH 	osa 🗖		grade 1 grade 2-6		12. Ectropion/Macroblepharon				
3. Cataract (congenital)			(multi)focal		13. Distichiasis /Ectopic cilia				
4. Retinal Dysplasia (RD)			geographical	I	14. Corneal dystrophy				cortical
5. Hypoplastic-/Micro-papilla					15. Cataract (non-congenital)				post. pol. ant sut. I.
	\perp		choroid. hypo	oplasia	To: Gataraot (non congenitar)	T			punctata
6. Collie Eye Anomaly (CEA)			coloboma other:		16. Lens luxation (primary)				nucleus
7. Other:	. ь		mild		17. Retinal degeneration (PRA	A) 🗀			other
8. IridoCorneal Angle Abnormality.	ICAA)		moderate		18. Other:				
Interpretation				,	•				
* "Unaffected" signifies that there is no	clinical evidence	of the known	or presumed hereditary eye	e disease	es (KP-HED) specified, whereas "af	fected" sig	nifies that th	here is such e	vidence.
** The animal displays clinical features the	nat could possibl	y fit the KP-HE	ED mentioned, but the char	nges are	inconclusive.				

*** The animal displays minor, but specific clinical signs of the KP-HED mentioned. Further development will confirm the diagnosis. Reexamination inmonths.

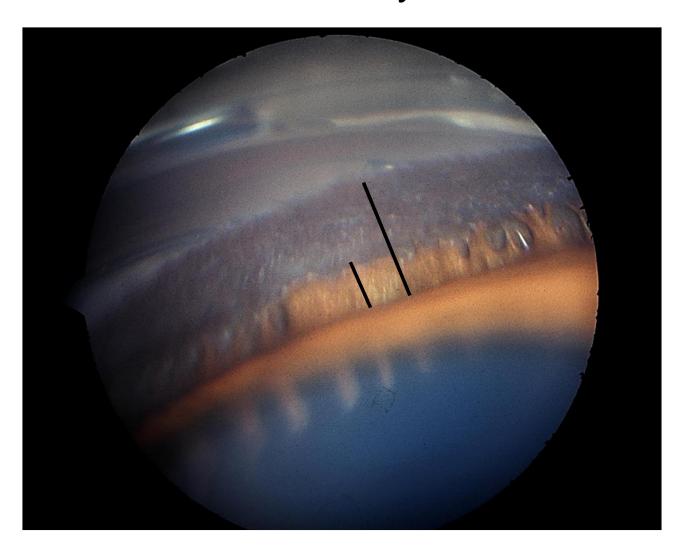
Case 1.

Vet advice: breeding is optional

"Mild-moderate forms: OPTIONAL (according to present scientific information available: if these dogs are used, it is recommended to breed these dogs to unaffected graded dogs).

"Iridocorneal angle formation may progressively change with age from normal/unaffected to abnormal/affected (mild/moderate/severe) regarding PLA and ICA-width. Therefore, gonioscopy should be started before breeding and repeated every 3 years

Case 2: Golden Retriever, 2yo, Female. Gonioscopy



Golden Retriever, 2yo, Female. Gonioscopy

PLA

"0-50% FL = unaffected

" >50-100% FL and/or < 25% LA = affected (mild)

" 25-50% LA = affected (moderate)

" > 50% LA = affected (severe)

ICA width

atio A/B: PL not visible

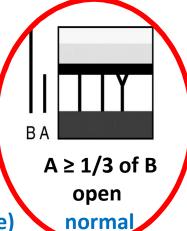
affected (severe)

closed



A < 1/3 of B narrow

affected (moderate)



Ratio A/B: Terminology:

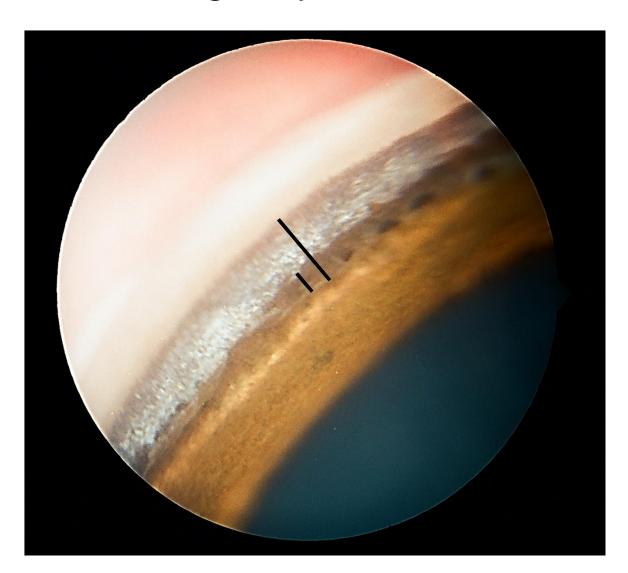
Golden Retriever, 2yo, Female. Gonioscopy

Descriptive comments:						8. 10	CAA: PLA 🦯	mild	
							\	mode	rate
								severe	•
							ICA <		v (moderate)
For diagrams							(width)	_	(severe)
Eye disease no.	m	ild	∟ Se	vere			(mail)	Closec	(Severe)
Results for the known or presumed	hereditar	ry eye diseas	es (KP-H	ED):	Results valid for 12 mon	ths			
	UNAFFECTED	** UNDETERMINED	AFFECTED			UNAFFECTED	*** SUSPICIOUS	AFFECTED	
1. Persistent Pupillary Membrane (PPM)	\Box			iris cornea	11. Entropion/Trichiasis	\Box			
 Persistent Hyperpl.Tunica Vasculosa Lentis/Primary Vitreous (PHTVL/PHPV) 				grade 1 grade 2-6	12. Ectropion/Macroblepharon				
3. Cataract (congenital)				(multi)focal	13. Distichiasis /Ectopic cilia				
4. Retinal Dysplasia (RD)				geographical total	14. Corneal dystrophy				cortical post. pol.
5. Hypoplastic-/Micro-papilla				choroid. hypoplasia	15. Cataract (non-congenital)				ant sut. I.
6. Collie Eye Anomaly (CEA)				coloboma other:	16. Lens luxation (primary)				punctata nucleus other
7. Other:				mild	17. Retinal degeneration (PRA	() 			Other
IridoCorneal Angle Abnormality. (ICAA)				moderate severe	18. Other:				
Interpretation					•				
* "Unaffected" signifies that there is no clinical	al evidence	of the known o	r presume	d hereditary eye disease	es (KP-HED) specified, whereas "af	fected" sig	nifies that th	nere is such e	evidence.
** The animal displays clinical features that co		•							
*** The animal displays minor, but specific clini	ical signs o	f the KP-HED r	nentioned.	Further development wi	II confirm the diagnosis. Reexamina	ation in	months.		

Case 2.

"Vet advice: no breeding from the affected animal

Case 3: Leonberger, 1 yo, Male. Gonioscopy



Leonberger, 1yo, Male. Gonioscopy

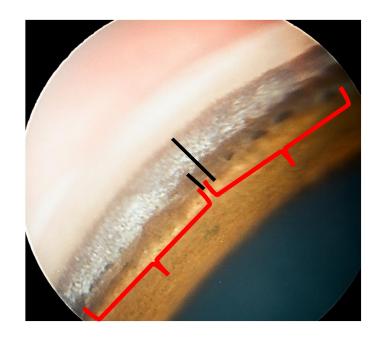
PLA

"0-50% FL = unaffected

" >50-100% FL and/or < 25% LA = affected (mild)

" 25-50% LA = affected (moderate)

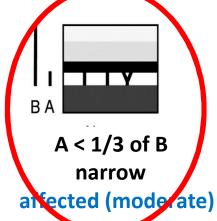
" > 50% LA = affected (severe)

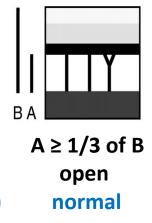


ICA width

B A

Ratio A/B: Terminology: PL not visible closed affected (severe)





Leonberger, 1yo, Male. Gonioscopy

Descriptive comments:						8. 10	CAA: PLA	- mild
							\	moderate
								severe
							ICA <	marrow (moderate)
Eye disease no.	. 🗆 m	ild	sev	ere			(width)	closed (severe)
Results for the known or presumed	hereditar	y eye diseas	es (KP-HE	D):	Results valid for 12 mor	nths		
	UNAFFECTED	** UNDETERMINED	AFFECTED			UNAFFECTED	*** SUSPICIOUS	* AFFECTED
1. Persistent Pupillary Membrane (PPM)	Φ			iris cornea	11. Entropion/Trichiasis	ф		
 Persistent Hyperpl.Tunica Vasculosa Lentis/Primary Vitreous (PHTVL/PHPV) 	+			grade 1 grade 2-6	12. Ectropion/Macroblepharor	י ב		
3. Cataract (congenital)				(multi)focal	13. Distichiasis /Ectopic cilia			
4. Retinal Dysplasia (RD)	+			geographical total	14. Corneal dystrophy			cortical
5. Hypoplastic-/Micro-papilla				choroid. hypoplasia	15. Cataract (non-congenital)			post. pol.
6. Collie Eye Anomaly (CEA)				coloboma	16. Lens luxation (primary)			punctata nucleus other
7. Other:					17. Retinal degeneration (PR	A) 🗀		U outer
8. IridoCorneal Angle Abnormality. (ICAA)				moderate severe	18. Other:			
Interpretation				•				
* "Unaffected" signifies that there is no clinical	al evidence	of the known o	r presumed	hereditary eye disease	es (KP-HED) specified, whereas "a	affected" sig	nifies that th	ere is such evidence.

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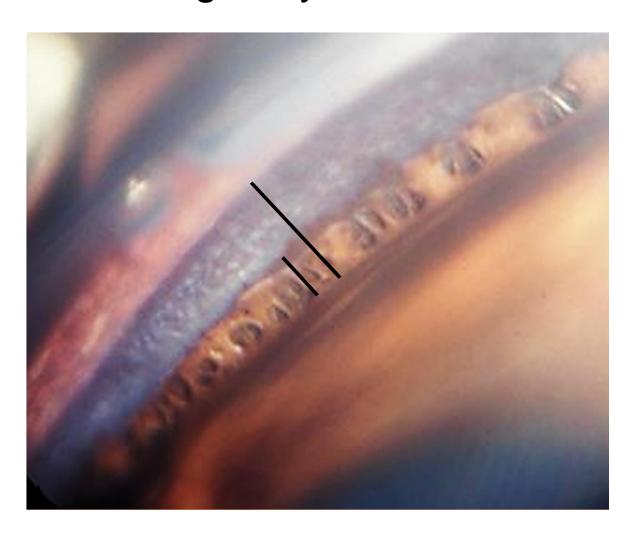
** The animal displays clinical features that could possibly fit the KP-HED mentioned, but the changes are inconclusive.

*** The animal displays minor, but specific clinical signs of the KP-HED mentioned. Further development will confirm the diagnosis. Reexamination inmonths.

Case 3.

"Vet advice: no breeding from the affected animal

Case 4: Leonberger, 2yo, Female. Gonioscopy



Leonberger, 2yo, Female. Gonioscopy

PLA

" 0 – 50% FL - unaffected

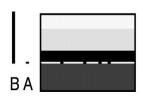
>50-100% FL and/or < 25% LA = affected (mild)

" 25-50% LA = affected (moderate)

" > 50% LA = affected (severe)

ICA width

Ratio A/B: Terminology:

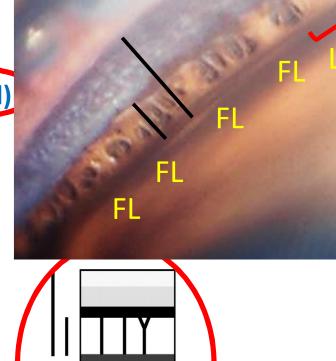


PL not visible closed affected (severe)



A < 1/3 of B narrow

affected (moderate)



 $A \ge 1/3$ of B

open

norma

Leonberger, 2yo, Female. Gonioscopy

Descriptive comments:						8. 1	CAA: PLA	mild
							\	moderate
								severe
							ICA _	marrow (moderate)
Eye disease no.	m	ild	S	evere			(width)	closed (severe)
Results for the known or presumed	hereditar	ry eye diseas	es (KP-l	HED):	Results valid for 12 m	onths		
t	NAFFECTED	** UNDETERMINED	AFFECTED			UNAFFECTED	*** SUSPICIOUS	AFFECTED *
1. Persistent Pupillary Membrane (PPM)	\Box		\square	iris cornea	11. Entropion/Trichiasis	\Box		
 Persistent Hyperpl.Tunica Vasculosa Lentis/Primary Vitreous (PHTVL/PHPV) 	ф			grade 1 grade 2-6	12. Ectropion/Macroblephan	on 🗀		
3. Cataract (congenital)				(multi)focal	13. Distichiasis /Ectopic cilia			
4. Retinal Dysplasia (RD)			=	geographical total	14. Corneal dystrophy			cortical post. pol.
5. Hypoplastic-/Micro-papilla				choroid. hypoplasia	15. Cataract (non-congenita	l) 🗀		ant sut. I.
6. Collie Eye Anomaly (CEA)				coloboma other:	16. Lens luxation (primary)			nucleus
7. Other:	—			mild	17. Retinal degeneration (P	RA) 🗀		
8. IridoCorneal Angle Abnormality. (ICAA)				moderate severe	18. Other:	🖶		
Interpretation					445 1155			
 * "Unaffected" signifies that there is no clinica ** The animal displays clinical features that co 						"affected" siç	gnities that the	nere is such evidence.
*** The animal displays minor, but specific clinic						ination in	months.	

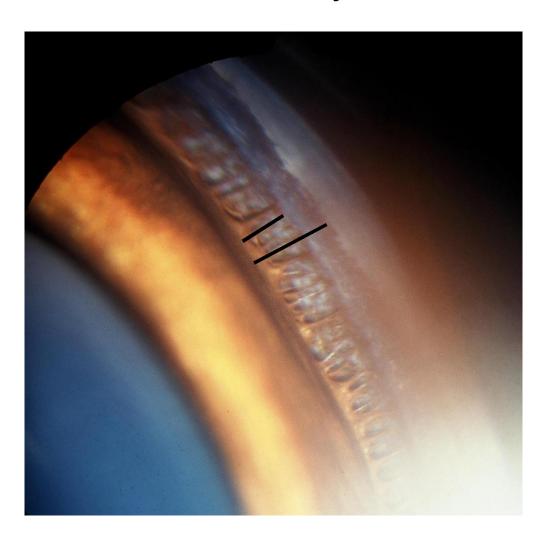
Case 4.

Vet advice: optional

"Mild-moderate forms: OPTIONAL (according to present scientific information available: if these dogs are used, it is recommended to breed these dogs to unaffected graded dogs).

"Iridocorneal angle formation may progressively change with age from normal/unaffected to abnormal/affected (mild/moderate/severe) regarding PLA and ICA-width. Therefore, gonioscopy should be started before breeding and repeated every 3 years

Case 5: Labrador Retriever, 1 yo, Male. Gonioscopy



Labrador Retriever, 1yo, Male. Gonioscopy

PLA

"0-50% FL = unaffected

">50-100% FL and/or < 25% LA = affected (mild)

" 25-50% LA = affected (moderate)

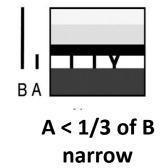
" > 50% LA = affected (severe)



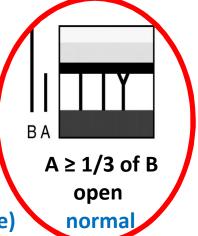
ICA width

B A

Ratio A/B: Terminology: PL not visible closed affected (severe)



affected (moderate)



Labrador Retriever, 1 yo, Male. Gonioscopy

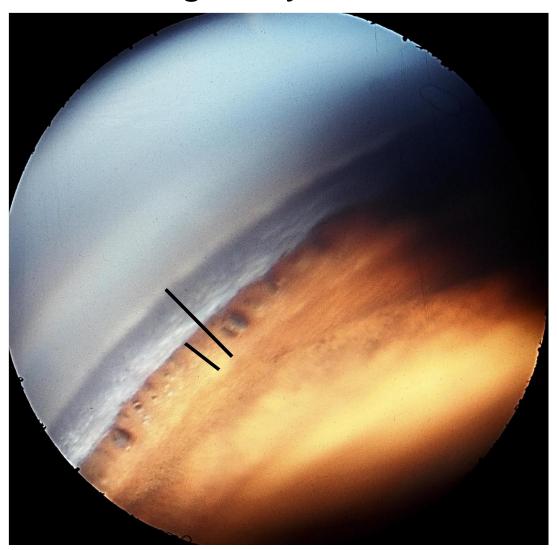
Descriptive comments:						8. 10	CAA: PLA	mild
							\	moderate
								severe
							ICA <	- narrow (moderate
Eye disease no.	. 🗀 m	ild	severe				(width)	closed (severe)
Results for the known or presumed	heredita	ry eye diseas	es (KP-HED):		Results valid for 12 mo	nths		
	WNAFFECTED	** UNDETERMINED	* AFFECTED			UNAFFECTED	*** SUSPICIOUS	AFFECTED
1. Persistent Pupillary Membrane (PPM)	\Box		iris	cornea	11. Entropion/Trichiasis	+		
 Persistent Hyperpl.Tunica Vasculosa Lentis/Primary Vitreous (PHTVL/PHPV) 			grade 1		12. Ectropion/Macroblepharo	n 📥		
3. Cataract (congenital)			(multi)fc	ocal	13. Distichiasis /Ectopic cilia			
4. Retinal Dysplasia (RD)	+		geograp	ohical	14. Corneal dystrophy			cortical post, po
5. Hypoplastic-/Micro-papilla	中		choroid	. hypoplasia	15. Cataract (non-congenital) 🖶		ant sut.
6. Collie Eye Anomaly (CEA)	中		colobon other:	na	16. Lens luxation (primary)			nucleus
7. Other:	中		mild		17. Retinal degeneration (PF	RA) 🗀		
IridoCorneal Angle Abnormality. (ICAA)			modera severe	te	18. Other:			
Interpretation						•		
* "Unaffected" signifies that there is no clinical						affected" sig	nifies that t	here is such evidence.
** The animal displays clinical features that co *** The animal displays minor, but specific clinical		•	_			nation in	months.	

Case 5.

Tick: unaffected

"Iridocorneal angle formation may progressively change with age from normal/unaffected to abnormal/affected (mild/moderate/severe) regarding PLA and ICA-width. Therefore, gonioscopy should be started before breeding and repeated every 3 years

Case 6: Leonberger, 2yo, Male. Gonioscopy



Leonberger, 2yo, Male. Gonioscopy

PLA

"0-50% FL = unaffected

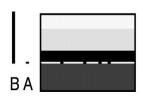
" >50-100% FL and/or < 25% LA = affected (mild)

" 25-50% LA = affected (moderate)

> 50% LA = affected (severe)

ICA width

Ratio A/B: Terminology:

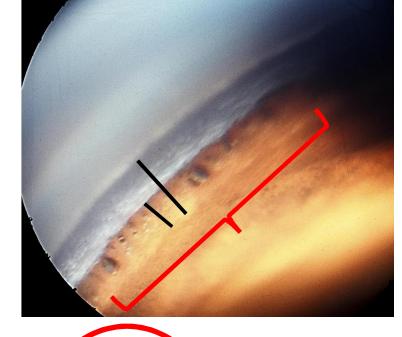


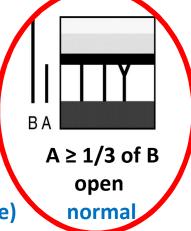
PL not visible closed affected (severe)



A < 1/3 of B narrow

affected (moderate)





Leonberger, 2yo, Male. Gonioscopy

Descriptive comments:								8. ICAA	: PLA 💳	mild	
Descriptive comments.										modera	ate
, 									\		
										severe	
	,	,							ICA _		(moderate)
Eye disease no		. umil	d	□ se	evere				(width)	closed	(severe)
Results for the know	wn or presumed	hereditary	eye diseas	es (KP-H	IED):	Results valid for	r 12 months				
	-	UNAFFECTED	** UNDETERMINED	AFFECTED			UNAF	* FECTED SU	*** JSPICIOUS	AFFECTED	
1. Persistent Pupillary M		中			iris cornea	11. Entropion/Trichias	sis 🗆	Þ			
Persistent Hyperpl.Tu Lentis/Primary Vitreou	unica Vasculosa us (PHTVL/PHPV)			\sqsubseteq	grade 1 grade 2-6	12. Ectropion/Macrob	lepharon	-			
3. Cataract (congenital)					(multi)focal	13. Distichiasis /Ecto	pic cilia 🗆	Þ			
4. Retinal Dysplasia (RD)			\equiv	geographical	14. Corneal dystroph	у 🗆	-			cortical
5. Hypoplastic-/Micro-pa	apilla	ф			choroid. hypoplasia	15. Cataract (non-cor	ngenital)	-			post. pol.
6. Collie Eye Anomaly (0	CEA)			=	coloboma other:	16. Lens luxation (pri	mary) \Box	-			punctata nucleus other
7. Other:					mild	17. Retinal degenera	tion (PRA)	-			Other
8. IridoCorneal Angle Ab	onormality. (ICAA)				moderate severe	18. Other:					
Interpretation				•							
* "Unaffected" signifies that	at there is no clinica	al evidence	of the known o	r presume	ed hereditary eye diseas	es (KP-HED) specified, w	vhereas "affecte	d" signifi	es that the	ere is such ev	vidence.
** The animal displays clini			•								
*** The animal dienlave mine	or but enacific clinic	cal ciane of	the KD-HED r	aentioned	Further development w	ill confirm the diagnosis	Pagyamination	in m/	onthe		,

Case 6.

"Vet advice: no breeding from the affected animal