



Newsletter of the  
International Society of Veterinary  
Ophthalmology  
April 2010

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*Co-Editor*

**Kristina Narfström**

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## ***Editorial***

### **Focus on Genetics**

Probably the main chance we have to favour animal welfare is by preventing the diffusion of hereditary eye diseases playing an active role in the screening programs already operating in several Countries all over the world.

Limiting factors to the diffusion of these programs are the need of a specific competence and the respect of strict rules by all participants. Personal interests of veterinarians and breeders may interfere with the correct application of national schemes, ethics becoming a further conditioning parameter among the variants to be considered.

These are the reasons why an interesting Genetics Update Symposium has been organized at the 2009 ACVO Conference in Chicago and Genetics play a consistent role in the scientific programs of the International Meetings listed in the "Coming Events" section of this issue of The Globe.

Most Veterinary Ophthalmologists have limited competence on Genetics, they need a continuous update even concerning the ophthalmic aspects of hereditary eye diseases.

The meritorious continuous efforts of the American and European Colleges of Veterinary Ophthalmologists to favour such an update,

spread information and sensitize interested people are reaching good results.

But few basic questions still need an answer:

- o what does the result of a genetic test really tell us ?
- o is genetic testing more reliable than our eye examination ?
- o will genetic tests gradually replace eye scheme examinations ?

Dr. Andras Komaromy, with his lecture "Maintaining Credibility for Eye Scheme Examinations in the Era of DNA-Testing" will try to answer these questions at the 2010 ECVO Meeting in Berlin, May 28, 2010.

See you there.

Claudio Peruccio

## ***Letter from the ISVO President***

Greetings

I wish firstly to express my appreciation and respect regarding the achievements of the Past President, Dr. Roze.

The ISVO/CLOVE/CBOV Joint Meeting was held at the Transamerica Hotel, São Paulo, SP - Brazil, on July 21 and 22, 2009. This meeting was chaired by Dr. José Luiz Laus DVM, MSc, PhD., and was held in conjunction with the WSAVA Congress.

Following the Opening Ceremony on the 21st, the CLOVE Lecture was delivered by Dr. Alejandro Bayón (Spain) and was entitled "Exotic Animals' Ophthalmology." This was followed by the WSAVA Lecture, delivered by Dr. David Maggs (USA) and entitled "Herpes Virus." On the 22nd, the Magrane Memorial Lecture was delivered by Dr. Peter Bedford (UK), entitled "Eye and Vision in the Vertebrates," and was followed by the CBOV Lecture by Dr. Kristina Narfström (USA), entitled "Inherited Retinal Diseases." As would be expected, all lectures were fully attended and active Q&A sessions added greatly to the value of each lecture. For myself, this experience has helped me to understand the enthusiasm for ophthalmology among veterinarians in South American countries. Despite traveling for more than 20 hours from Japan to one of Japan's most distant countries, my stay in Brazil was only brief. What remains, however, is the warmth of the welcome I was accorded by Drs. Laus

and Barros, which touched me greatly. At the ISVO Board Meeting, Dr. Bedford was elected President Elect, Dr. Sandra van der Woerd (USA) was elected Secretary, and Dr. David Maggs (USA) was elected Treasurer. They have my utmost confidence. I wish to express sincere gratitude to Dr. Helper for his commitment to the post of Treasurer over an extended period. My participation in this meeting was a great opportunity for me to interact closely with the ISVO-Board members.

ISVO has been working on the standardization of canine eye certification, and I am committed to continuing that work. In addition, it is now common for clinical veterinarians to encounter eye diseases prevalent in some breeds of dogs, such as glaucoma and cataracts, and hereditary eye diseases, such as ulcerative keratitis and dry eyes. I am thinking of having more occasions to discuss these diseases, including their treatment methods and the evaluation of the results, with specialists from around the world.

The ISVO meeting in 2011 will be held in Jeju Island (a UNESCO world heritage site), South Korea, from October 14 to 17, 2011, in conjunction with the WSAVA world congress. It may facilitate the establishment of an organization of veterinary ophthalmology in Asia. The ECVO Annual Scientific Meeting will be held in Berlin in May 2010 and the ACVO Annual Conference will be held in San Diego in October 2010.

I look forward to meeting and talking to many members at those times.

ISVO President Akihiko Saito



## *The Scientific Editorial*

### **Asymmetric severe retinal degeneration observed in the Flat Coated Retriever**

#### **Background**

During recent years cases of asymmetric retinal degeneration have been observed in the Flat Coated Retriever (FCR) dog in Europe. Several cases have looked like bilateral end-stage retinal

degeneration and have been diagnosed as affected by PRA or a PRA-like retinopathy. Other cases have shown uni- or bilateral lesions more compatible with chorioretinal scar formation(s). Many of the FCR's have been interrelated and therefore the question arose whether the retinopathy observed was hereditary or not.

I have examined 23 FCRs (12 females and 11 males, 2- 13 years old), during 2008 and 2009 in Sweden. The methods used: initial examination of the pupillary light reflexes (PLRs ) and a quick vision test using falling cotton balls, first in the dark then in the light. After pupillary dilation using tropicamide, indirect ophthalmoscopy and slitlamp biomicroscopy was performed in all dogs. In 4 of the dogs (1 normal and 3 affected) bilateral retinal function was evaluated by electroretinography (ERG), using the portable HMsERG (Retvet Corp., Columbia, MO) and the Dog Protocol (1) under deep sedation with medetomidine or dexmedetomidine IV. Bilateral fundus photos were obtained from affected and normal dogs using the portable Clearview fundus camera after the ERG procedure. Whole blood (in EDTA) was collected from affected and unaffected FCR dogs and submitted to the Canine Biobank at the Swedish University of Agricultural Sciences, in Uppsala, Sweden.

#### **Results**

A total of 9 affected FCR dogs were found with retinal degeneration of variable severity.

Five (2 males and 3 females, 4-8 years old) had unilateral signs of chorioretinitis. The contralateral eyes were normal. The unilateral lesions in 3 of these dogs appeared like distinct multiple areas of chorioretinal scarring, mainly in the peripheral fundus. One of the unilateral cases showed a diffuse mottling in the far periphery of the tapetal fundus. ERGs in this dog showed an approximate 25% reduction of ERG amplitudes in the affected eye, while function of the contralateral eye was considered normal. Another case showed marked chorioretinal scarring with large atrophic areas around the optic nerve head. Also in this dog the contralateral eye was normal, with a thin arcus around the optic nerve head, the arcus considered to be a normal variation.

Four of the FCRs (4 males, 5-8 years old) were affected by bilateral retinopathies: one case (a 5-year-old) had unilateral complete retinal atrophy in the left eye while the other eye showed more diffuse changes together with more distinct chorioretinal scarring (Fig. 1).

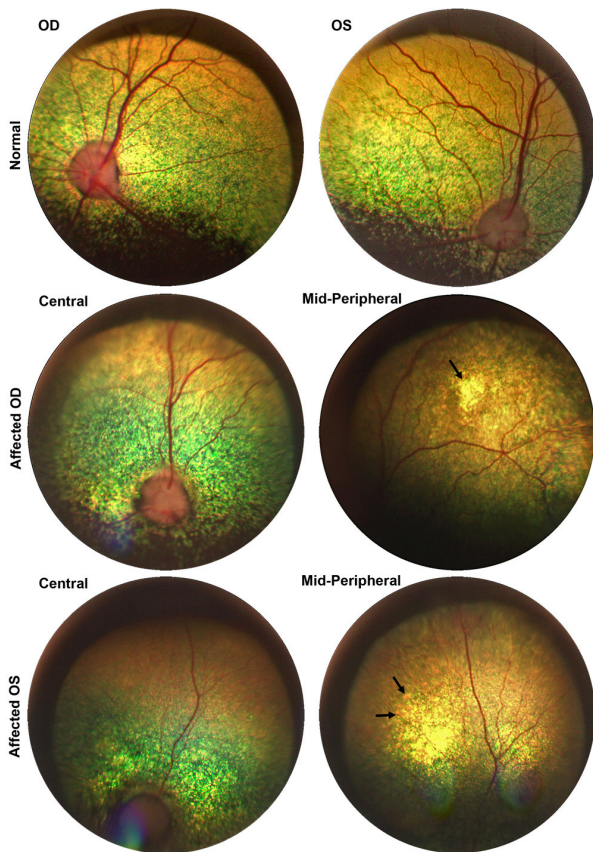


Fig. 1: Fundus photographs from normal and affected dogs. Note the diameter of the central vasculature in the normal dog and compare with those of the affected dog's right and left eyes, respectively. Note also the hyperreflective scars in both eyes (arrows), indicative of chorioretinitis. OD: right eye, OS: left eye

The PLRs appeared bilaterally reduced in this dog but visual testing showed normal-appearing vision in both dark and light adapted conditions when testing the right eye, while the dog appeared non-visual on the left eye. Bilateral ERGs showed non-recordable responses from the left eye while the right eye had recordable mixed responses with approximately 25% reduced cone responses, while flicker responses were within normal limits (Fig.2). The implicit times for the single flash cone and flicker responses were also within limits of normality in the right eye.

One of the four bilaterally affected dogs showed rather similar changes in both eyes: generalized retinal atrophy but with deep choroidal scarring as island in the otherwise atrophic appearing fundus. This dog had non-responsive PLRs and was clinically blind. The other two dogs had severe unilateral lesions; multiple circular chorioretinal scars, while the contralateral eyes were more diffusely affected with grayish mottling and scarring most marked in the peripheral tapetal fundus.

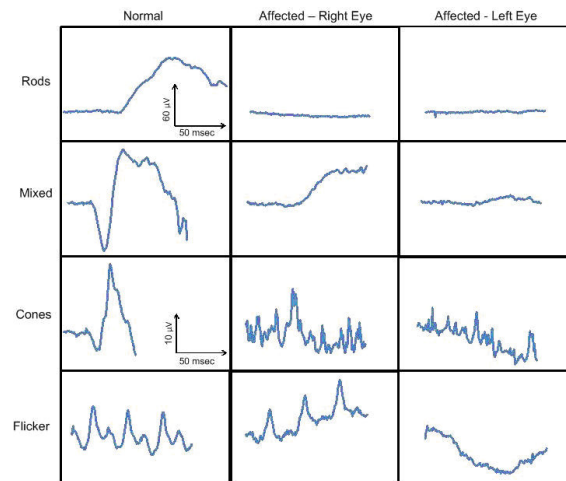


Fig. 2. Results of ERGs obtained in both eyes simultaneously in one affected dog and in one age-matched normal dog (results from only one eye is shown for the latter). Responses from rods using 10 mcd.s/m<sup>2</sup> of white light flash stimuli and mixed responses (rods and cones) using 3 cd.s/m<sup>2</sup>, both in scotopic conditions, and results from cones and flicker recordings, using 30 cd/m<sup>2</sup> of background light with 3 cd.s/m<sup>2</sup> of flash stimuli for both are shown.

		Normal	Affected Right Eye	Affected Left Eye
Rods	b-amplitude (μV)	68.7	NR	NR
	b-implicit time (ms)	83.2	NR	NR
Mixed	a-amplitude (μV)	65.4	NR	NR
	a-implicit time (ms)	14.2	NR	NR
	b-amplitude (μV)	139.7	47	14
	b-implicit time (ms)	32.9	66.8	65.1
Cones	a-amplitude (μV)	4.3	3	NR
	a-implicit time (ms)	11.4	14.3	NR
	b-amplitude (μV)	22.5	15	NR
	b-implicit time (ms)	34.1	24.2	NR
Flicker	b-amplitude (μV)	11.1	9	NR
	b-implicit time (ms)	21.1	22.6	NR

## Discussion

None of the cases described above showed signs of "classical PRA" (2, 3) (e.g. bilateral, generalized atrophic lesions in the fundus and approximately at the same stage of degeneration in both eyes, with bilateral blindness at the most advanced disease stage). ERGs documented that the lesions were markedly different in each of the two eyes. For example in 2 cases there were normal ERG responses in one eye, while the contralateral affected eye showed reduced amplitudes but with normal timing characteristics of the ERG parameters. The latter finding indicated that patches of photoreceptors are dying or are non-functional, while the majority of the photoreceptors still have a normal function, a finding that usually is not compatible with a primary hereditary photoreceptor condition.

Affected dogs have all shown signs of inflammatory processes in the fundus, either unilaterally or bilaterally at variable time points in life (from age 2 years and older). There didn't appear to be any correlation between retinal changes and age.

Clinical signs of chorioretinitis have been observed in all cases. The following lists causes of chorioretinitis and retinochoroiditis that have been described in dogs (4): virus infections (distemper, herpes, morbilli and west nile), rickettsia (*Ehrlichia*, *Rickettsia rickettsii*), mycotic disease, algae (prototheca), protozoal disease (*Toxoplasma gondii*, *Neospora*, *Leishmania donovani*), parasitic disease (*Toxocara canis*, *Angiostrongylus vasorum*, diptera), immune-mediated disease and a combination of one of the above and immune-mediated disease.

In a publication from 1987 by Hughes et al. (5), a disease resembling the profile of "our" FCR disease was described in 39% of 1,448 working sheep dogs. Only 6% of 125 New Zealand dogs raised in urban environment were similarly affected. Histologic examination was performed in 70 dogs (both eyes), whereof 47 had ocular inflammatory disease which could be subdivided into 3 categories: 1. In dogs 3 years old or younger, with active inflammation mainly in the posterior segment and, in which 4 dogs had migrating nematode larvae identified as genus *Toxocara*. 2. In dogs of variable ages but all with severe visual impairment; diffuse retinitis and retinal atrophy with focal retinal fibrosis and choroidal fibrosis. 3. In dogs over 3 years of age, many with normal visual function; chronic, low-grade retinitis with variable retinal atrophy. Compelling proof was put forth in the article that the environment was most important in the pathogenesis of the sheep-herding dog retinal disease.

The FCR is a dog breed often trained and used for hunting. It is likely that environmental factors play a role also in the development of the FCR chorioretinopathy. FCR dogs are trained regularly using cadavers of various types of birds. The dogs may become infected with one of the above listed agents. Consumption also of cadavers with *Toxocara* larvae in a strong migratory phase, could result in somatic migration in the dog and in ocular larva migrans. Immunological factors would also play a role in the more low-grade inflammatory responses, but continued processes with death of retinal cells and further, causative of

chronic chorioretinal scarring.

Recently, I obtained one eye of an 8-year-old FCR with asymmetrical retinal degeneration, cataracts and glaucoma for histopathology and evaluated by Dr. Richard Dubielzig. A profound retinal atrophy was observed also with severe choroidal fibrosis, the latter found to be characteristic for category 2 working dog chorioretinopathy. There was also lymphoplasmacytic inflammatory infiltrate throughout the entire choroid. The cataract and glaucoma appeared to be secondary to inflammatory reactions with strands of collagen, spindle- and pigmented cells in the posterior part of the anterior segment.

Further investigations are needed in order to elucidate the specific causative agent in this, in some cases devastating but most probably non-hereditary, disease.

#### References:

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2. Gelatt, K,N: *Essentials of Veterinary Ophthalmology*. Lipincott Williams & Wilkins, Philadelphia, p. 270-279, 2000
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4. Johnson,BW, Kirkpatrick, CE, Whiteley, HE, Morton, D, Helper, LC: Retinitis and intraocular larval migration in a group of Border Collies. *JAVMA*, 25:623-629, 1989
5. Hughes PL, Dubielzig, RR, Kazacos, KR: Multifocal retinitis in New Zealand sheep dogs. *Vet Pathol* 24:22-27, 1987

Kristina Narfström



# Coming Events



## 2010 ESVO ANNUAL CONFERENCE Malahide, Co Dublin, Ireland May 13 - 16, 2010

### Programme Synopsis

Given the opportunity this year, the Dublin organising committee has decided to host a conference which we hope will be very appealing to the veterinary ophthalmology practitioners of Europe. It is a change in format from the usual joint conference hosted with the ECVO.

#### Day 1 - Workshops

##### *Electroretinography*

Hosted by Dr Serge Rosolen and Dr Philippe Durieux.

##### *Glaucoma*

Endolaser Cyclophotocoagulation - hosted by Dineli Bras & Prof David Wilkie  
This workshop will include the theory of endolaser use in the morning and will have a limited number of places for a endolaser practical workshop in the afternoon.

#### Day 2 - Eyelid Surgery including VICAS Day for Irish Practitioners

Prof. Peter Bedford

An expert in the field, and a very authoritative speaker, will be presenting 3 lectures.

LECTURE 1: EYELIDS AND THEIR DISEASES : THE CANINE MAN-MADE DISASTERS  
The kinked, the bent, the loose, those grossly deformed -- all the product of our human desire to produce a particular appearance to what the irresponsible Breed Standard liberally calls the "eye". Fortunately these man-made deformities lend themselves to surgical correction, some of which can be really successful in alleviating discomfort and disability. Sadly not all our therapy can be truly effective in all our patients and it must be obvious not only to the Bateson Enquiry that major changes to Breed Standards are essential. We'll discuss treatment in terms of

success and in this first session we'll deal mainly with the problems due to macrophthalmos.

LECTURE 2. YES, MORE EYELID DISEASE In this session we'll discuss some of the other inherited eyelid conditions in the dog such as distichiasis, its second cousin labelled descriptively as the ectopic cilium and trichiasis. Again its surgery that provides the answers and "they make them, we fix them" underlines the significant role that today's breeder has to play in improving the lot of the pedigree dog.

LECTURE 3. AND YET MORE EYELID DISEASE In this post-prandial session we'll discuss various aspects of acquired eyelid disease and describe some techniques to repair the eyelid after tumour resection in the dog and cat. Fortunately both species often have a sufficiency of skin to repair the largest of surgical and traumatic wounds, with perhaps the most ingenious of techniques employing the Mustarde approach to repair the upper eyelid or our use of tissue from the upper lip to replace the lower eyelid.

There will also be a session on **Large Animal Ophthalmology** - to include eyelid repair, eye enucleation and disorders of the lids and corneas. This will be presented by Dr Terry Grimes.

#### Day 3 - Cataract surgery

Prof David Wilkie

One of the best known speakers worldwide in Ophthalmology, who is much appreciated for his style of delivery and wealth of knowledge. The very popular **Hereditary Eye Disease session** will be hosted by Stuart Ellis who was the chief panelist in the UK eye scheme for many years. Stuart is a very informative speaker and we are promised a very stimulating session.

#### Day 4 - Genetics

Dr Cathryn Mellersh

A leader in genetics research who is based at the Animal Health Trust in England This promises to be a practical session informing the ophthalmology practitioner of the practical aspect of genetics, when a condition can be considered inherited, and what role genetic testing plays. Within this session there will be a 30 minute clinical genetics consultation.

Programme updates: email [info@evo2010.com](mailto:info@evo2010.com)

For further details please contact: [www.esvo.org](http://www.esvo.org)





**2010 ECVO MEETING**  
**Berlin, Germany**  
**May 28 - 29, 2010**

**"Nuggets of Knowledge" - April 1st**  
*No fooling! What is to come in Berlin...*

**Maintaining Credibility for Eye Scheme Examinations in the Era of DNA-Testing**  
**Andras Komaromy, DMV, PhD, DACVO, DECVO, Assistant Professor of Ophthalmology, University of PA**

Questions to ponder for discussion at this session...

- 1) What does the result of a genetic test really tell us?
- 2) Is genetic testing more reliable than our eye examination?
- 3) Will genetic tests gradually replace eye scheme examinations?

**Diseases and Surgery of the Eyelids**  
**Frans C. Stades, DVM, PhD, DECVO, European Specialist in Veterinary Ophthalmology, Dierenarts, Specialist Oogheekunde**

Lid surgery is as old as the hills ("road to Rome"; Celsus, first century a.d). War traumata and neoplasia have always been challenges to human surgeons and later human ophthalmologists. Modern instruments, suture material, antibiotics and anti-inflammatory drugs enabled much more sophisticated ophthalmic reconstructive surgery. Lid surgery is still under continuous development and opens therapeutical options for the restoration of deformities, large defects e.g. after the removal of redundant skin or tumors.

**Abstract Presentation Topics**

The [ECVO abstracts and presentation titles](#) and schedules are now available for viewing. In addition to a full presentation schedule over 30 posters will be available for two days for your perusal. Thank you all for your submissions.

**Registration is Limited**

Due to an overwhelmingly positive response, registration for this year's conference will now be Limited due to space constrictions. We want to

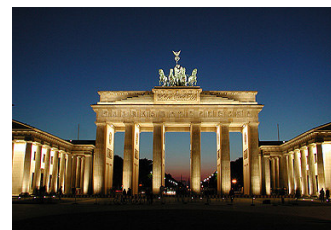
make sure our attendees are comfortable and enjoy the meeting, therefore a limit has now been set. **All pre-registration will close on April 15th.**

**Industry Sponsors/Exhibitors**

Thank you to our sponsors and exhibitors. ECVO will have over 20 booths available with veterinary ophthalmology products available for you to explore during your two days at the conference. Visit the following:

- [www.dioptrix.com](http://www.dioptrix.com)
- [www.imedpharma.com](http://www.imedpharma.com)
- [www.ocuscience.us](http://www.ocuscience.us)
- [www.sjhales.com](http://www.sjhales.com)
- [www.eickemeyer.de](http://www.eickemeyer.de)
- [www.intervet.com](http://www.intervet.com)
- [www.acrivet.eu](http://www.acrivet.eu)
- [www.vetoquinol.com](http://www.vetoquinol.com)

**Celebrating Berlin - Brandenburg Gate**



One of the only remaining gates through which one used to enter Berlin.

Commissioned by King Frederick William II of Prussia as a sign of peace. Considered one of Europe's most famous landmarks. Now a symbol of German reunification.



**Wednesday and Thursday, 26-27 May, 2010 ECVO Committee Meetings**

**Thursday, 27 May, 2010**

- 14.00-18.30 ECVO AGM (Diplomates only)
- Coffee Break
- ECVO AGM (Diplomates only)
- 18.30 Welcome Reception (for all attendees)

**Friday, 28 May, 2010**

- 08.00-17.00 Exhibits
- 08.30 -10.00 **András Komáromy: Maintaining Credibility for Eye Scheme Examinations in the Era of DNA-Testing**
- 10.00-10.30 **Coffee Break**
- 10.30-11.15 **Frans Stades, Ellen Bjerckås: The ECVO Hereditary Eye Disease Scheme and its Evolution**
- 11.15-12.30 **HED Self Assessment Test**
- 12.45-14.00 **Lunch**
- 12.45-18.30 **Poster Session**

14.00-15.30	<b>Scientific Session</b>	09:15	<b>Benz:</b> Detection of <i>Encephalitozoon cuniculi</i> in the lens of cats
14:00	<b>Eule:</b> Lipidomic analysis of canine Meibomian gland secretions	09:30	<b>Matas:</b> Unilateral eyelid lesion and ophthalmologic findings in an Aardvark
14:15	<b>Gasser:</b> Investigations on conjunctival goblet cells and on the characteristics of glands associated with the eye in the Guinea Pig	09:45	<b>Seruca:</b> Ocular consequences of blunt trauma in two species of nocturnal raptors (Athene Noctua and Otus Scops)
14:30	<b>Leiva:</b> <i>Leishmania spp</i> causing nodular granulomatous episcleritis in dogs	10.00-10.30	<b>Coffee Break</b>
14:45	<b>Dubielzig:</b> The pathology of primary canine glaucoma with emphasis on early changes	10.30-11.15	<b>Veit-Peter Gabel: Vitreoretinal Surgery in Human Patients</b>
15:00	<b>Vieira da Silva:</b> The use of intraocular pressure curves in the management of canine glaucoma, a preliminary study	11.15-12.00	<b>Scientific Session</b>
15:15	<b>McLellan:</b> Spectral domain-OCT imaging of the retina and optic nerve in normal and glaucomatous cats	11:15	<b>Busse:</b> The use of contrast enhanced ultrasonography to assess the patency of a persistent hyaloids artery in two dogs with multiple ocular defects
15:30-16:00	<b>Coffee Break</b>	11:30	<b>Braus:</b> Incidence of retinal detachment in cataractous Bichon Frise dogs in the UK
16:00-17:30	<b>Frans Stades: Surgery of the Eye Lids</b>	11:45	<b>Kador:</b> Topical Kinostat™ ameliorates the clinical development and progression of cataracts in dogs with diabetes mellitus
17:30-17:45	<b>Break</b>	12.00-14.00	<b>Lunch</b>
17:45	<b>Allgoewer:</b> Diode laser therapy of pigmented iris lesions in young dogs	12.00-12.45	Poster Authors by posters for questions (even numbered posters)
18:00	<b>Rhodes:</b> Parotid duct transposition: a retrospective review of 56 dogs (92 eyes) from 1999 to 2009	12.45-14.00	Poster Authors by posters for questions (odd numbered posters)
18:15	<b>Premont:</b> Description of a perilimbal pocket technique for surgical replacement of prolapsed nictitans gland in the dog	14.00-15.30	<b>Dr. Joe Wolfer: Vitreoretinal Surgery - What is Applicable in Small Animal Patients?</b>
19.30-23.00	<b>Conference Buffet Dinner</b>	15.30-16.00	<b>Coffee Break</b>
<b>Saturday, 29 May, 2010</b>		16.00-17.45	<b>Scientific Session</b>
08.00-17.00	<b>Exhibits</b>	16:00	<b>Fernandez-Bueno:</b> Retinal pigment epithelium (RPE) graft autotransplantation in the pig
08.30-16.30	<b>Poster Session</b>	16:15	<b>Deutsch:</b> Retinal hemorrhage and/or retinal detachment in cats with systemic hypertension
08.30-10.00	<b>Scientific Session (Residents' Forum)</b>	16:30	<b>Narfstrom.</b> A novel retinal degenerative disease of Bengal cats
08:30	<b>Escanilla:</b> Aqueous humor fibrinolytic activity in dogs with ocular disease	16:45	<b>Donisa:</b> Incidence of dogs corioretinitis in diverse pathology
08:45	<b>Mazzucchelli:</b> Lens instability in five related cats	17:00	<b>Karlstam:</b> Slowly progressive rod-cone degeneration in the Shetland Sheepdog
09:00	<b>Pigatto:</b> Anterior capsule staining using 0.025% trypan blue in mature cataracts in dogs	17:15	<b>Kjaer:</b> Multifocal retinal degeneration in the Border Collie

- 17:30 **Beltran:** Selection of efficient promoters for gene therapy targeting rods in the canine retina
- 17.45 **Closing and Awards**



**International Equine Ophthalmology Consortium Symposium  
Vienna, Austria, June 4-5, 2010**

The 2010 IEOC meeting will be held at the Vienna College of Veterinary Medicine on June 4 and 5, 2010. The meeting will be hosted by Dr. Barbara Nell. This small group meeting will consist of invited state of the art lectures, presentation of research abstracts, and roundtable discussions. Dr. Nell is also planning some wonderful social events to better know the city of Vienna. Please mark your calendars and plan to attend the 2010 IEOC meeting in Vienna. All pre-registration closes May 3<sup>rd</sup>.

**TENTATIVE AGENDA**

(Current as of February 1st, 2010.)

*Attendees will be notified of any changes.*

**Thursday, 3 June:**

7:30 Departure to Piber Stud Farm tour from Hotel Donauzentrum (Optional - not included in registration)

17:00 Return to Hotel Donauzentrum

19:00 Welcome reception

**Friday, 4 June:**

8:30-10:30 Scientific Programme

10:30-11:00 Break

11:00-12:30 Scientific Programme

12:30-13:30 Lunch - hosted

13:30-14:45 Scientific Programme

14:45-15:15 Break

15:15-16:30 Scientific Programme

18:30 Gathering in Palais Esterhazy

19:15 "Unknown Vienna" Walking Tour

20:30 Dinner at Griechenbeisl

**Saturday, 5 June:**

9:00-10:30 Scientific Programme

10:30-11:00 Break

11:00-12:30 Scientific Programme

12:30-13:30 Lunch - hosted

13:30-14:30 Scientific Programme

14:30-15:00 Break

15:00-16:00 Scientific Programme

16:30 Trip to winery, depart from University (Optional - not included in registration)

23:00-24:00 Return to Hotel Donauzentrum

More information at: [www.equineophtho.com](http://www.equineophtho.com)

**William Magrane Basic Science Course in Veterinary & Comparative Ophthalmology  
North Carolina, NC State University  
College of Veterinary Medicine  
June 7-25, 2010**

Sponsored by North Carolina State University & ACVO Vision for Animals Foundation

Open to residents and general practice DVMs alike.

Online registration is now available for the BSC. For more information, visit

<http://cvm.ncsu.edu/conted/ophtho.html>



**The Ophthalmology Chapter  
Australian College of Veterinary Scientists  
Gold Coast International Hotel  
Surfers Paradise, Queensland Australia  
July 1-3, 2010**

**Scientific Program**

THURSDAY 1 JULY 2010

CHAPTER NAME : OPHTHALMOLOGY

9.00 *Welcome*

9.10 Microphthalmia and Peter's anomaly in a Cria - Edith Hampson

9.30 Surgical excision of a benign apocrine hydrocystoma from the eyelid of a Persian cat - Peter Adamson

10.00 *Morning tea*

10.30 Skin flaps for reconstruction of the orbital region - Jason Mouatt

11.10 Mustarde's operation: Reconstruction of upper eyelid defects by using a rotation flap from the lower lid - Martyn King

11.30 Unusual eyelid abnormality in a Domestic Shorthair cat - Denise Brudenall

11.50 Interesting eye case - Mark Billson

12.10 Case Report - Anna Deykin

12.30 *Lunch*

1.30 The vertebrate cornea: adaptation for aerial and aquatic vision - Professor Shaun Collin

2.20 Evolution of the vertebrate eye: insights from hagfishes and lampreys - Professor Shaun Collin

3.00 *Afternoon tea*

3.30 Visual ecology in sharks and birds - Professor Shaun Collin

4.10 Pigmented squamous cell carcinoma of the

- conjunctival fornix in a horse -  
Simon Hurn
- 4.30 Gonioscopy findings and primary  
glaucoma in Golden Retrievers - Chloe  
Hardman
- 4.50 Case Report - Andrew Turner
- 5.10 FINISH

FRIDAY 2 JULY 2010

*Morning session combined with Anaesthesia,  
Emergency and Critical Care Chapter*

- 8.30 Examination and assessment of the eye -  
Edith Hampson
- 8.50 Triage of ocular trauma - Chloe Hardman
- 9.10 Triage of ocular trauma continued -  
Chloe Hardman
- 9.30 Proptosis - management of cases and  
prognostic indicators - Mark Billson
- 10.00 *Tea*
- 10.30 Emergency management of the Melting  
cornea - Cameron Whittaker
- 10.50 Differentiating between uveitis and  
glaucoma - Mike Bernays
- 11.10 Differentiating between uveitis and  
glaucoma continued - Mike Bernays
- 11.30 Emergency assessment and management  
of sudden onset blindness - Robin Stanley
- 11.50 Anaesthesia for ophthalmology -  
Sanaa Zaki
- 12.10 Rabbit ophthalmology - Gerry Skinner
- 12.30 *Lunch*

*Afternoon session combined with Small Animal  
Medicine Chapter*

- 1.30 Examination of the ocular fundus -  
Denise Brudenall
- 1.50 Anterior uveitis and systemic disease  
- Andrew Turner
- 2.10 Anterior uveitis and systemic disease  
continued - Andrew Turner
- 2.20 Endocrine disease and the eye -  
Cameron Whittaker
- 2.40 Hypertension and the eye - Martyn King
- 3.00 *Tea*
- 3.30 Sudden Acquired Retinal Degeneration  
Syndrome - Simon Hurn
- 3.50 Diseases of the orbit - Mark Billson
- 4.10 Antifungal medication for diseases of the  
eye and orbit - Paul Mills
- 4.30 Antifungal medication for diseases of the  
eye and orbit continued - Paul Mills
- 4.50 Questions
- 5.00 FINISH

SATURDAY 3 JULY 2010

- 8.30 Abnormal cardiac auscultation in the mature  
dog and cat - implications for anaesthesia -  
Fiona Campbell
- 9.10 Anaesthetic choices and peri-operative  
support of the oldies and sickies - Steve  
Haskins
- 10.00 *Morning tea*
- 10.30 Interesting ocular fundus lesions -  
Robin Stanley
- 10.50 Roundtable JPEG session - bring along an  
interesting ocular photo for discussion
- 12.30 *Lunch*
- 1.30 Australian Canine Eye Scheme Meeting
- 3.00 *Afternoon tea*
- 3.30 Chapter Annual General Meeting
- 5.10 FINISH

Further details including the rest of the conference  
and hotel accommodation can be found at  
[www.acvsc.org.au](http://www.acvsc.org.au)



### **Annual Nordic Eye Panels Meeting 2-4th September 2010**

The Annual Nordic Eye Panels Meeting will be  
hosted this year by the Swedish Society for  
Veterinary Ophthalmology. The location for the  
meeting is Johannisberg, which is close to Arlanda,  
the Stockholm airport.

The invited lectures this year will be given by  
Kristina Narfstrom - who will provide updates on  
inherited retinal diseases of dogs and cats and some  
insights into the structural and functional evaluation  
of retinal disease processes - and David Maggs -  
who will provide about 10 hours of lectures on  
various aspects of surface ocular disease in dogs and  
cats.

For questions in regards to the meeting contact the  
SSVO chairman, Dr. Christopher Martinsen  
([Christopher@nasumvet.nu](mailto:Christopher@nasumvet.nu)).

For more information visit the website of the  
Swedish Society of Veterinary Ophthalmology at:  
[www.SSVO.se](http://www.SSVO.se)





**2010 ACVO ANNUAL CONFERENCE**  
**Paradise Point Resort & Spa**  
**San Diego, CA, USA**  
**October 6-9, 2010**

The ACVO conference to be held in San Diego, California will have a little bit of everything for everyone. Located 15 minutes from downtown San Diego and right across the street from SeaWorld, the location has a lot to offer. Visit the facility website at: [www.paradisipoint.com](http://www.paradisipoint.com) to view the location.

Visit [www.ACVOconference.org](http://www.ACVOconference.org) for registration and scheduling details.

SEAWORLD FUN!!!: We are currently organizing the opening welcome reception to take place at SeaWorld, right across the street from the resort. This will likely consist of food, drinks and a private medical-focused show just for attendees. We are also working on reduced group rates for conference attendees and families. More information will be known in May when registration begins.

The program will include:

**MEMORIAL LECTURER:**

The Memorial Lecturer will be Dr. Michael Robinson, Senior Medical Director of Ophthalmology Clinical Research at Allergan, Inc. He will be discussing the advances of ocular drug delivery. Exact title will be posted in May.

**PRACTICE MANAGEMENT & GENETICS:**

Pre-congresses will include Practice Management 2-3 hours and Genetics 2-3 hours. They will not overlap so you could attend both on Wednesday afternoon prior to the opening reception.

Both will be approximately \$40-\$50 and will be roundtable discussion formats with some lead discussions.

**ERG WET LAB:**

One wet lab will be held on Sunday, this will be an ERG course. Up to 60 individuals will be allowed to participate in the lab and lecture section. A lecture-only AM session will be available also. ACVO/ECVO diplomates will be give first priority registration, it will be open to all registrants one month into registration. Speakers will be Dr. Ron Ofri and Dr. Kristina Narfstrom. Labs will be facilitated by Dr. Simon Petersen-Jones and Professor Vernon Odom of West Virginia University. Fees are yet to be determined but are likely to be \$325-\$375 each person and will include CE, notes, 2 meals, breaks, etc.

**GENERAL PRACTITIONERS:**

ACVO will host an 8 hour CE course on Saturday, October 9th for general practitioners. The fee is typically \$225 and includes 8 hours of RACE approved CE, notes, breakfast and lunch. View the 2009 program as topics may be similar in 2010.

**ABSTRACT PRESENTATIONS:**

Approximately 100-140 abstract presentations anticipated. Typically 30-40 will be in poster presentation format. The others would be presented in the resident session, the general session or special sessions such as the Vitreous or Equine meetings. Some breakouts will be offered on Friday during the conference.

Registration begins early May. Visit [www.ACVOconference.org](http://www.ACVOconference.org) for details.

American College of Veterinary Ophthalmologists

ACVO Vision for Animals Foundation

Ms. Stacey L. Daniel, MA, Executive Director

PO Box 1311

Meridian ID 83680

Ph 208-466-7624

Fax 208-466-7693

Email: [office10@acvo.org](mailto:office10@acvo.org)

[www.acvo.org](http://www.acvo.org) & [www.visionforanimals.org](http://www.visionforanimals.org)

**JOIN US AT AN ACVO CONFERENCE...**

San Diego, CA - October 6-9, 2010

Hilton Head, SC - October 26-29, 2011

Portland, OR - October 17-20, 2012



# From the Congresses

From the 2009 ACVO Annual Conference  
Hyatt Regency Chicago  
Chicago, IL

To let our readers have a taste of the Scientific Content of the meeting, a few selected abstracts from the Proceedings Notes have been included in this issue of The Globe.

A RETROSPECTIVE REVIEW OF THE HISTOLOGICAL AND CLINICAL CHARACTERISTICS OF CANINE OCULAR GLIOVASCULAR SYNDROME (COGS): A SYNDROME OF INTRAVITREAL GLIAL AGGREGATES, NEOVASCULAR MEMBRANE PROLIFERATION, INTRAOCULAR HEMORRHAGE, AND NEOVASCULAR GLAUCOMA IN THE DOG (AN Treadwell 1, C Naranjo 2, MK Zarfoss<sup>3</sup>, T Blocker 1, RR Dubielzig 2)

1 Eye Care for Animals; 2 University of Wisconsin College of Veterinary Medicine; 3 University of Illinois College of Veterinary Medicine.

**Purpose.** This study aims to characterize the histopathologic findings, clinical behavior, diagnostic findings, and treatment outcomes in canine globes affected by a syndrome associated with neovascular glaucoma of which we have proposed the name Canine Ocular Gliovascular Syndrome (COGS).

**Methods.** The archives at COPLOW were used to identify 36 eyes with COGS. The inclusion criteria included: clusters of glial cells within the vitreous, a neovascular membrane extending from the optic nerve head or retina, and two or more histological criteria of glaucoma. Cases were randomly selected for special stain evaluations (iron, Masson trichrome, Alcian Blue, and PAS) and immunohistochemical staining for GFAP and VEGF. Clinical data, treatments, and outcomes were obtained from case records and referring veterinarian follow-up.

**Results.** Thirtysix eyes of 35 dogs were identified with COGS. The Labrador retriever was the most predominant breed affected (20). The average age at diagnosis was 8.78 years. Average IOP at presentation was 38.7mmHg and average time to enucleation or evisceration was 26.8 days. Most cases presented with hyphema (25) and symptoms consistent with glaucoma. The outcome in all cases was uncontrolled glaucoma

and blindness in the affected eye. Bilateral COGS was confirmed histologically in one dog and suspected clinically in 2 additional dogs. Positive GFAP staining was found in 14 out of 16 globes. Positive VEGF staining was found in 5 out of 6 globes.

**Conclusions.** The etiology of COGS remains unknown. It appears to have a predilection for the Labrador retriever breed. GFAP positive staining suggests astrocytic glial origin. **None.**

COMPARISON OF THE EFFECTS OF TOPICAL ADMINISTRATION OF A FIXED COMBINATION LATANOPROST AND TIMOLOL TO MONOTHERAPY WITH LATANOPROST OR TIMOLOL ON INTRAOCULAR PRESSURE, PUPIL SIZE, AND HEART RATE IN NORMAL DOGS (LN Smith, 1 PE Miller, 2 LM Felchle 1)

Eye Care for Animals; 1 University of Wisconsin-Madison, School of Veterinary Medicine, Madison, WI; 2

**Purpose.** To determine whether a combination of latanoprost 0.005%/timolol 0.5% (LAT) (Pfizer, NYC, NY) administered topically BID has any greater effects on intraocular pressure (IOP), pupil size (PS), and heart rate (HR) in normal dogs than do latanoprost 0.005% (Pfizer, Inc, NYC, NY) or timolol 0.5% (Falcon Pharmaceuticals Ltd, Fort Worth, TX) monotherapy.

**Methods.** 17 normal dogs were randomly assigned to the treatment group (9) or the saline group (8). 3 phases were conducted: LAT, latanoprost monotherapy, and timolol monotherapy. Baseline values were established on Day 1 of each phase. On Days 2 through 5, drugs were administered topically BID to one randomly chosen eye of dogs in the treatment group. The saline group received saline drops OU BID. IOP, PS, and HR were measured at 0, 2, 4, 6, 8, and 9 hours after dosing for both groups.

**Results.** At 2 through 9 hours post-dose on Days 2 and 5, the LAT and latanoprost treated eyes showed a significant decrease in IOP ( $p < 0.05$ ) and a significantly smaller PS ( $p < 0.05$ ) compared to dogs receiving timolol monotherapy or saline. LAT and timolol alone both significantly lowered HR ( $p < 0.05$ ) compared to latanoprost and saline groups on Day 2 and 5.

**Conclusions.** Topical administration of latanoprost alone is as effective at lowering IOP as LAT when administered on a BID dosing schedule in normal dogs. Timolol, either alone or in combination, appears to have little effect on IOP in normal dogs; but causes a reduction in HR. **None.**

EFFECT OF EYELID MANIPULATION AND MANUAL JUGULAR COMPRESSION ON INTRAOCULAR PRESSURE MEASUREMENT IN DOGS (HE Klein<sup>1</sup>, SG Krohne<sup>1</sup>, J Stiles<sup>1</sup>, AS Mohamed<sup>2</sup>)

<sup>1</sup> Department of Veterinary Clinical Sciences;

<sup>2</sup> Department of Comparative Pathobiology, School of Veterinary Medicine, Purdue University, West Lafayette, IN

**Purpose.** To determine the effect of eyelid manipulation and manual jugular compression on intraocular pressure (IOP) measurement by applanation tonometry (Tono-Pen) in normal dogs.

**Methods.** IOP was measured in 57 eyes of 30 dogs using 6 methods of eyelid manipulation and/or jugular compression. The methods used in each eye included a) minimal eyelid manipulation, b) maximal dorsoventral extension of the eyelids, c) lateral eyelid extension, d) manual compression of the ipsilateral jugular vein e) manual compression of both jugular veins, and f) lateral eyelid extension and manual compression of both jugular veins. Significant difference between each method was assessed by GLM and Tukey's studentized range test.

**Results.** The two manipulations that caused the greatest mean increase in IOP were lateral eyelid extension combined with compression of both jugular veins (17.6 mmHg increase) and lateral extension alone (16.5 mmHg increase). These results were statistically significant (95% CI=15.7-19.6 and 95% CI=14.5-18.4 respectively). Dorsoventral eyelid extension or compression of both jugular veins alone also significantly increased mean IOP. Compression of the ipsilateral jugular vein did not significantly alter IOP compared to minimal eyelid manipulation.

**Conclusions.** Traction on the eyelids and/or pressure on both jugular veins can significantly and clinically increase IOP values as measured by the Tono-pen in normal dogs. **None.**

GENE THERAPY IN THE SECOND EYE OF RPE65 DEFICIENT DOGS ALSO IMPROVES RETINAL FUNCTION (MJ Annear, 1 JT Bartoe, 1 SE Barker, 3 AJ Smith, 3 PG Curran, 2 JW Bainbridge, 3 RR Ali, 3 SM Petersen-Jones, 1) Dept Small Animal Clinical Sciences, Michigan State University;<sup>1</sup> Center for Statistical Consulting, Michigan State University;<sup>2</sup> Division of Molecular Therapy, UCL Institute of Ophthalmology, London;<sup>3</sup>

**Purpose.** To evaluate whether prior subretinal gene therapy in the RPE65 -/- dog using an AAV2/2 construct containing the human RPE65

gene results in immune responses that interfere with rescue when the contralateral eye is similarly treated.

**Methods.** Nine RPE65 -/- dogs underwent subretinal injection of an AAV2/2 vector containing the human RPE65 gene coding region driven by the human RPE65 promoter. Subretinal injection of the same vector construct was performed in the contralateral eye 90-180 days after the first injection. Rescue of retinal function was assessed by electroretinography and vision testing. A dark-adapted intensity: response series and rod flicker responses were recorded. Following light-adaptation single flash and flicker responses were recorded. To assess rod and cone rescue ERG responses at 1 cdS/m<sup>2</sup> (below threshold for an untreated RPE65 -/- dog) and 33Hz flicker responses respectively were measured. A vision testing apparatus that assessed a subject's ability to see an open exit tunnel was used to quantitatively measure visual function under differing light levels. Serum was collected to assess immune response to AAV2 (serum neutralizing antibodies) and RPE65 protein (IgM and IgG levels by ELISA). Statistical analysis was performed with significance set at  $p \leq 0.05$ .

**Results.** Rod and cone rescue was present in 16 of 18 injected eyes, and remained static up to 2 years post treatment. There was no significant difference in rod or cone response between the first or second injected eyes at any time point. Vision testing found significant improvement in both 'time to exit' and 'first correct choice of exit' relative to pre-treatment values. There was no significant difference between first or second treated eyes. A circulating immune response to the vector and RPE65 protein was detected but the level of response did not correlate with degree of rescue in the second eye.

**Conclusion.** Successful rescue using AAV2 gene therapy in the second eye is possible in the RPE65 -/- dog. This has important implications for treatment of human Leber congenital amaurosis type II patients. Supported by the British Retinitis Pigmentosa Society. **None**

A HISTOLOGIC SERIES OF SECONDARY UVEAL MELANOMAS IN ELEVEN DOGS (KA Konrade, 1 A Hoffman, 1 CS Schubert, 2 RR Dubielzig, 2) Eye Care For Animals, Pasadena, CA;<sup>1</sup> School of Veterinary Medicine, University of Wisconsin;<sup>2</sup>

**Purpose.** To describe the clinical and histological features of a series of eleven canine cases of secondary uveal melanomas.

**Methods.** Eleven canine cases of secondary uveal melanomas were histologically examined at the comparative ocular pathology laboratory of

Wisconsin (COPLOW). Age, primary site of origin, time to metastasis, presenting ocular clinical signs, and histological descriptions were examined.

**Results.** Dogs were between 6-15 years, with an average age of 9 years. Most were large breed dogs and distant primary tumor sites were of the oral cavity, distal limbs (digits), and skin. Prior to enucleation, 10/11 cases showed signs of anterior uveitis and 4/11 were diagnosed with secondary glaucoma. 4/11 cases presented with anterior uveal masses of varying pigment (light tan to dark brown). 8/11 tumors presented in the iris and/or ciliary body and 3/11 presented in the iris/ciliary body and choroid. All of the eyes with secondary choroidal tumors had evidence of retinal detachment. 6/11 primary tumors arose from the digits, 3/11 were from the oral cavity (palate or gingival) and 2/11 were cutaneous (including the lip). The average time for dogs to develop clinically apparent metastatic disease to the uveal tract was 2 years (range 1 month- 4 years) after the initial diagnosis of malignant melanoma.

**Conclusion.** Ocular examination of localized and generalized malignant melanoma in dogs may reveal a far greater number of intraocular metastatic melanomas than previously documented. Furthermore, all dogs with a suspected uveal tumor should receive a thorough physical examination including the digits, oral cavity, and integument even if the uveal mass is in a normotensive, visual eye. **None.**

PHARMACOKINETICS OF FAMCICLOVIR AND PENCICLOVIR FOLLOWING SINGLE-DOSE ORAL ADMINISTRATION OF FAMCICLOVIR TO CATS (SM Thomasy<sup>1</sup>, T Whittm<sup>2</sup>, SD Stanley<sup>1</sup>, and DJ Maggs<sup>1</sup>)

<sup>1</sup>School of Veterinary Medicine, University of California-Davis, CA, USA, <sup>2</sup>Faculty of Veterinary Science, University of Melbourne VIC, Australia.

**Purpose.** To further investigate pharmacokinetics of famciclovir and its active metabolite penciclovir following oral administration of famciclovir to cats.

**Methods.** Six cats (mean body weight 4.2 kg and age 1.3 yrs) each received a single oral dose of famciclovir at 40 mg/kg followed after a 14-day washout period by 90 mg/kg. At fixed time points for 24 h after famciclovir administration, plasma concentrations were determined for both famciclovir and penciclovir, using liquid chromatography/ mass spectrometry, and concentration-time data assessed using non compartmental analysis. A two-sample t test was used to determine whether dose had a significant

( $P < 0.05$ ) effect on pharmacokinetic variables. **Results (mean  $\pm$  SD).** Following administration of 40 or 90 mg/kg famciclovir, maximum plasma famciclovir concentration ( $C_{max}$ ;  $2.70 \pm 2.23$  or  $2.98 \pm 1.30$   $\mu\text{g/ml}$ ) occurred at  $0.8 \pm 0.3$  or  $1.1 \pm 0.5$  h, and plasma penciclovir  $C_{max}$  ( $1.34 \pm 0.33$  or  $1.27 \pm 0.33$   $\mu\text{g/ml}$ ) occurred at  $2.8 \pm 1.8$  or  $3.0 \pm 1.1$  h, respectively. Penciclovir elimination half-life ( $t_{1/2}(el)$ ) was  $4.2 \pm 0.6$  or  $4.8 \pm 1.4$  h, respectively. Relative bioavailability of famciclovir following dose escalation from 40 to 90 mg/kg was  $161\% \pm 124\%$  (range 34-333%). No significant differences were detected in plasma  $C_{max}$  or time to  $C_{max}$  ( $T_{max}$ ) for either drug, or for penciclovir  $t_{1/2}(el)$  for cats receiving 40 or 90 mg/kg of famciclovir. **Conclusions.** These data suggest that 40 mg/kg famciclovir produces similar  $C_{max}$ ,  $T_{max}$ , and therefore potentially similar antiviral efficacy to that produced by 90 mg/kg famciclovir. Supported by the ACVO VAF. **None.**



## Memo

**May 13-16, 2010**

ESVO Annual Conference  
Malahide, Co Dublin, Ireland

**May 28-29, 2010**

ECVO Annual Meeting  
Berlin, Germany

**June 4-5, 2010**

IEOC Symposium  
Vienna, Austria

**June 7-25, 2010**

Veterinary Ophthalmology Basic Science Course  
North Carolina, NC, USA

**July 1-3, 2010**

The Ophthalmology Chapter  
Australian College of Veterinary Scientists  
Surfers Paradise, Queensland Australia

**2-4 September 2010**

Annual Nordic Eye Panels Meeting  
Johannisberg, Sweden

**October 6-9, 2010**

ACVO Annual Conference  
San Diego, CA, USA



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  - Bruce Robertson (Australia)**  
[bruce@eyevet.com.au](mailto:bruce@eyevet.com.au)
  - Jose Luiz Laus (Brazil)**  
[jllaus@fcav.unesp.br](mailto:jllaus@fcav.unesp.br)
  - Bob Munger (USA)**  
[eyedvm@AOL.COM](mailto:eyedvm@AOL.COM)



## *Useful e-mail addresses*

- American College of Veterinary Ophthalmologists (ACVO): [www.acvo.org](http://www.acvo.org)
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Continuing Education Courses in the United Kingdom: [www.bsava.com](http://www.bsava.com)

International Veterinary Information Service (IVIS): [www.ivis.org](http://www.ivis.org)

LatinoAmerican College of Veterinary Ophthalmologists: [www.clov.org](http://www.clov.org)

Nice home page in German: [www.augentierarzt.at](http://www.augentierarzt.at)



### NOTE FROM THE ISVO TREASURER

"To join ISVO, please contact the Treasurer, David Maggs, at [djmaggs@ucdavis.edu](mailto:djmaggs@ucdavis.edu) for an application form. The current dues are US\$ 20 which guarantees the initial 2-year membership. Currently there is no renewal fee after the member's first 2 years expire; however this is subject to revision."

David Maggs  
Treasurer ISVO



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