

Use of meibography, interferometry and placid-disk topography as a new diagnostic technique for the examination of the rabbit's tear film.



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Introduction

Lacrimal disorders are a common clinical presentation in rabbit medicine:

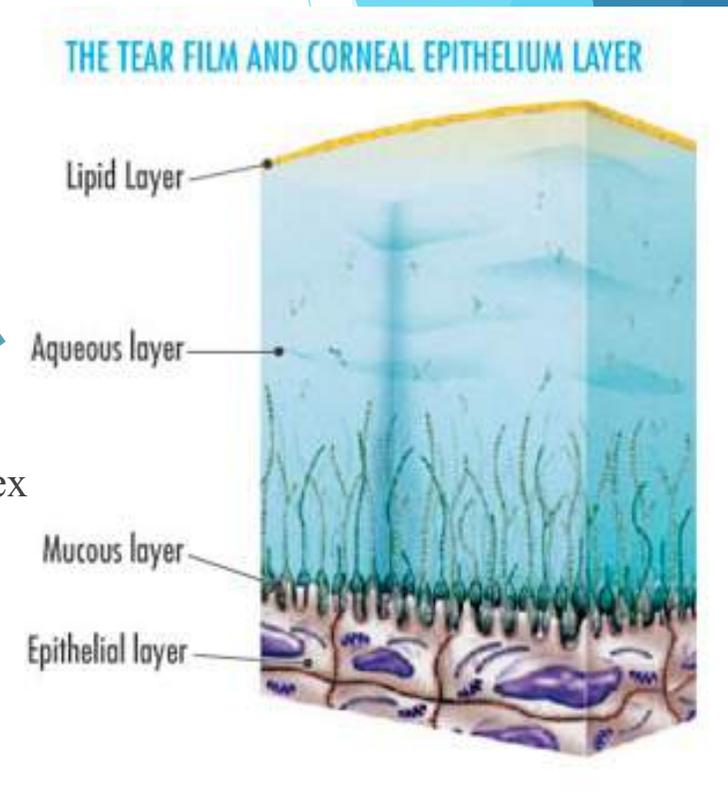


- Conjunctivitis
- Epiphora
- Blepharitis
- Dacryocystitis
- Nasolacrimal Duct Obstruction

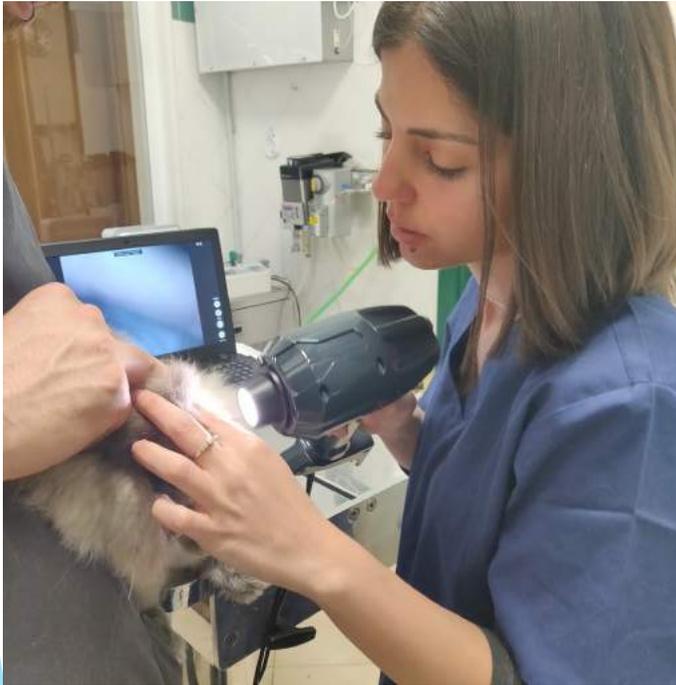
Clinical examination

The standard ophthalmic exam includes the use of:

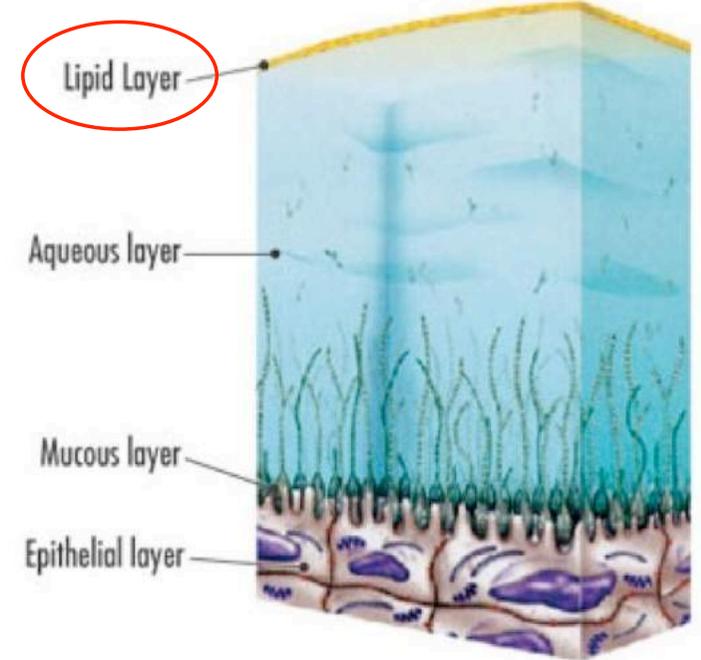
- ▶ Schirmer's test and Red Phenol thread (PRT) test
- ▶ Measuring intraocular pressure (IOP)
- ▶ Fluorescein eye stain test
- ▶ The menace response reflex, The pupillary light reflex (PLR), The dazzle reflex
- ▶ Direct/indirect Ophthalmoscopy



Thanks to the innovation in ocular imaging (meibography, interferometry, placid-disk topography), it is now possible to investigate the qualitative composition of the tear film.



THE TEAR FILM AND CORNEAL EPITHELIUM LAYER



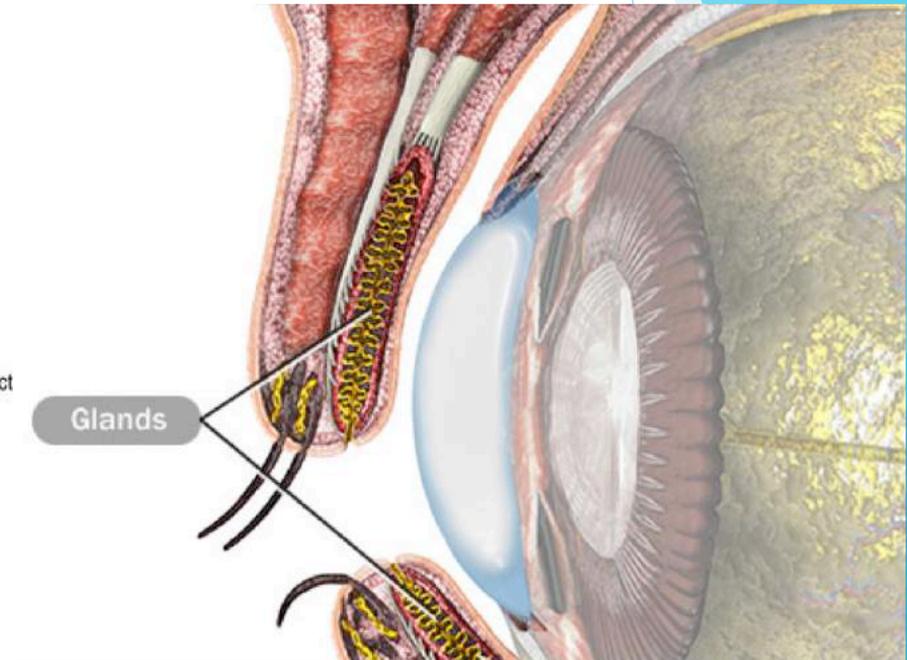
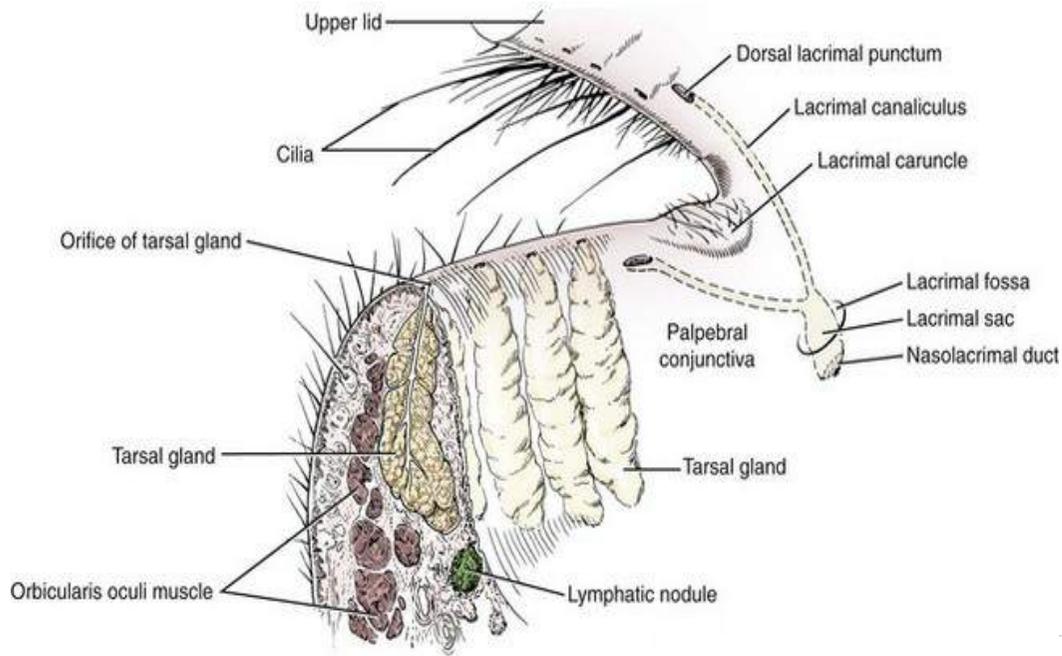
Materials and methods



- ▶ 21 clinically healthy (without any ocular symptoms) pet rabbits
- ▶ both sexes (11 f/ 10 m)
- ▶ aged between 1 and 4 years old

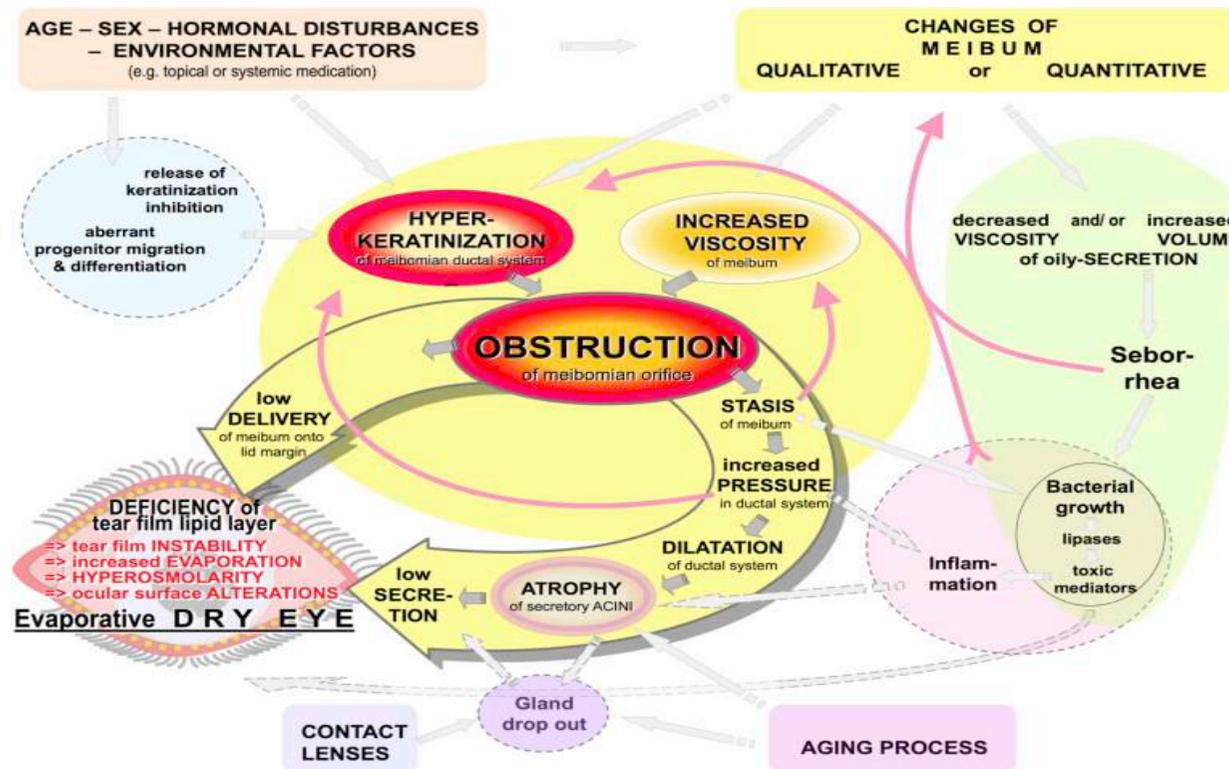
Anatomy

Meibomian glands play a significant role in tear production by contributing lipids to the superficial tear film.



Physiology

Meibum permeates the tear surface preventing tear evaporation and thus desiccation of the ocular surface



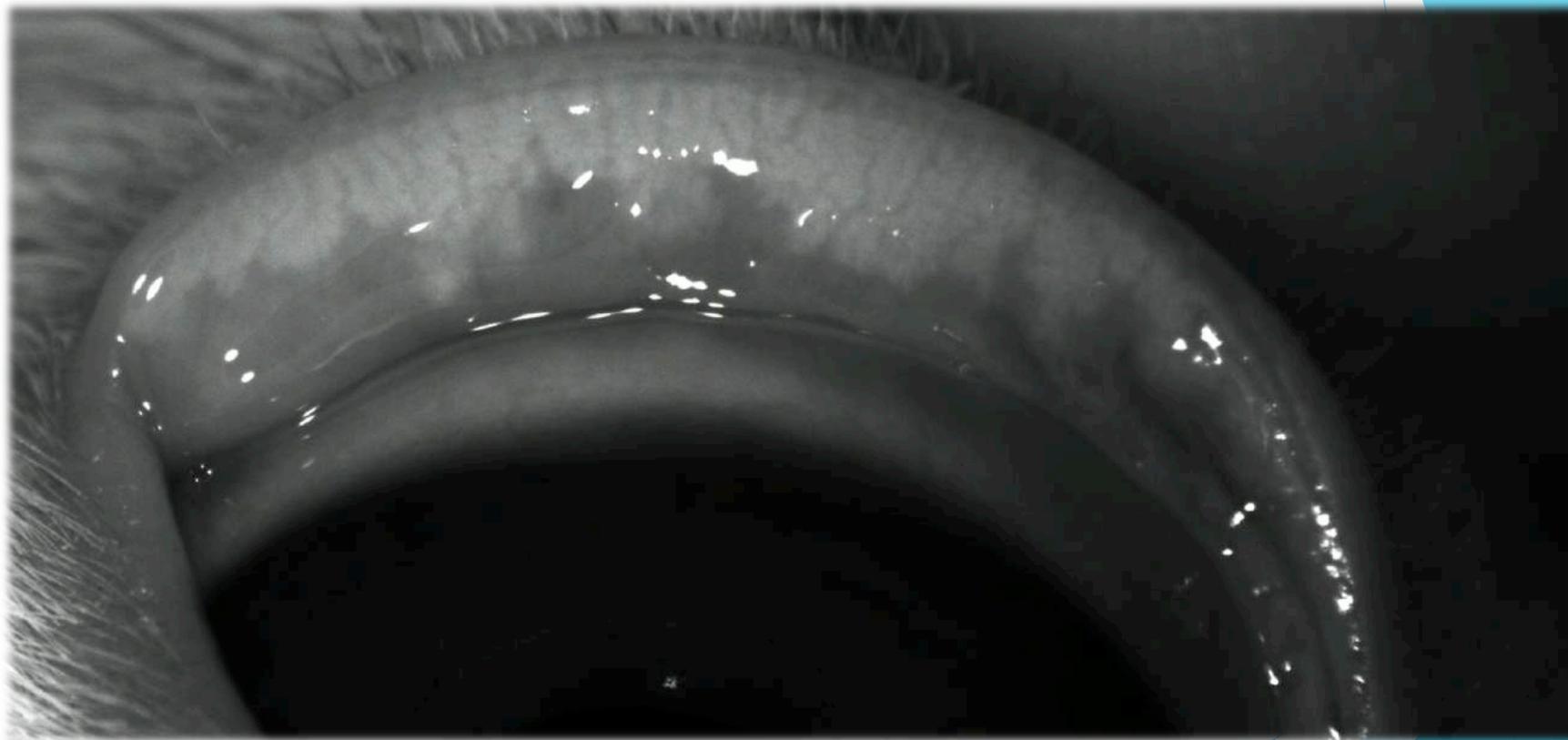
Meibography

Meibography is an imaging study developed 35 years ago exclusively for the purpose of observing the morphology of these glands in vivo.

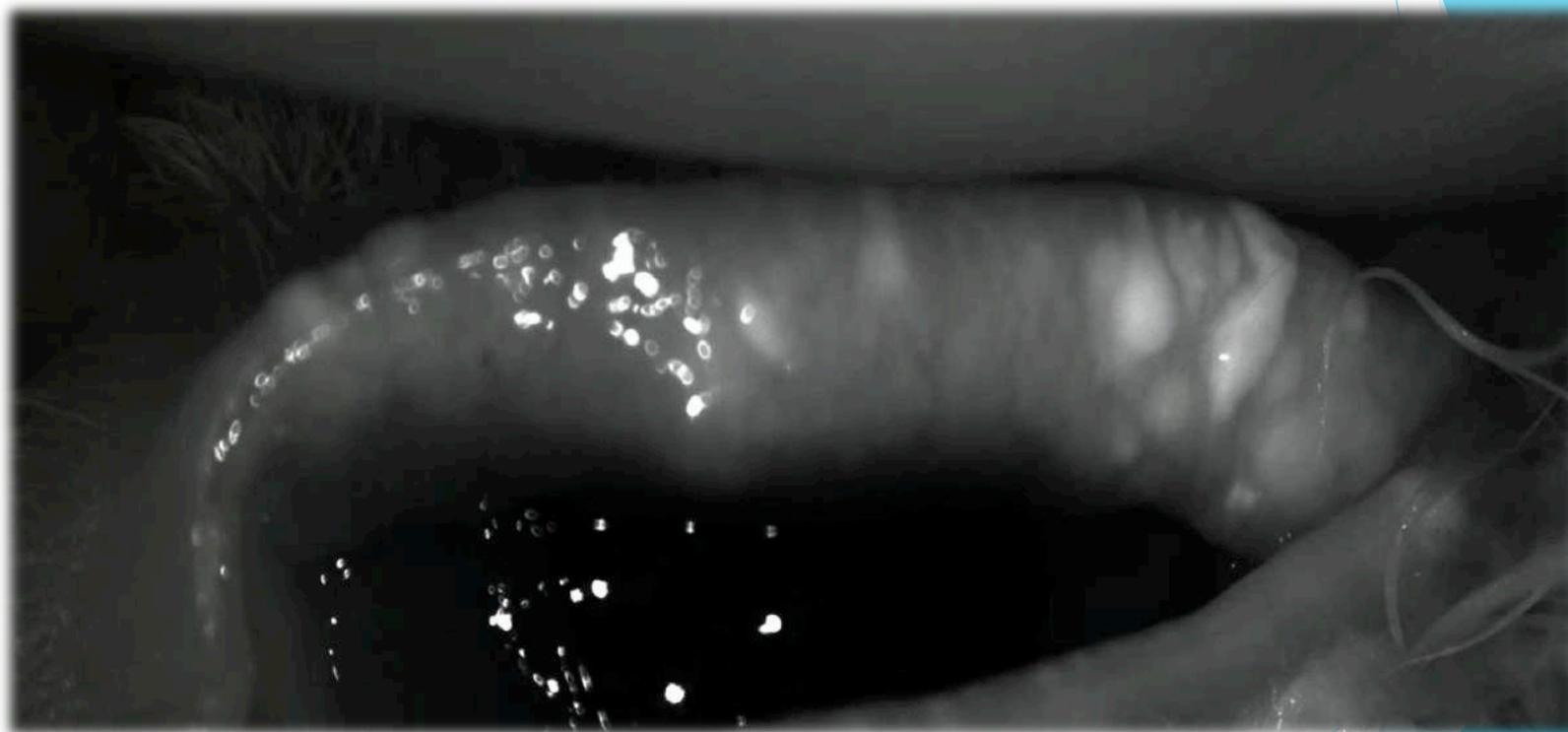


Normal appearance of meibomian's glands in rabbit

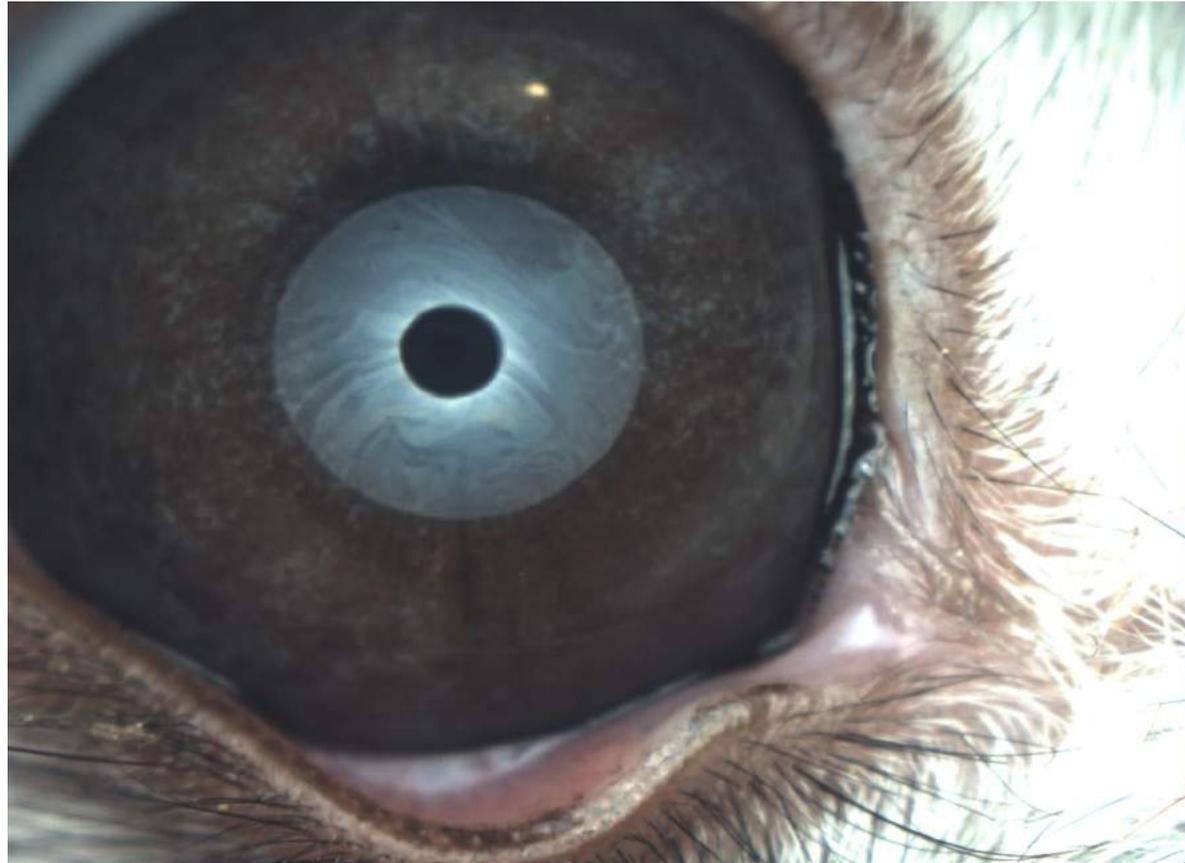
Meibography



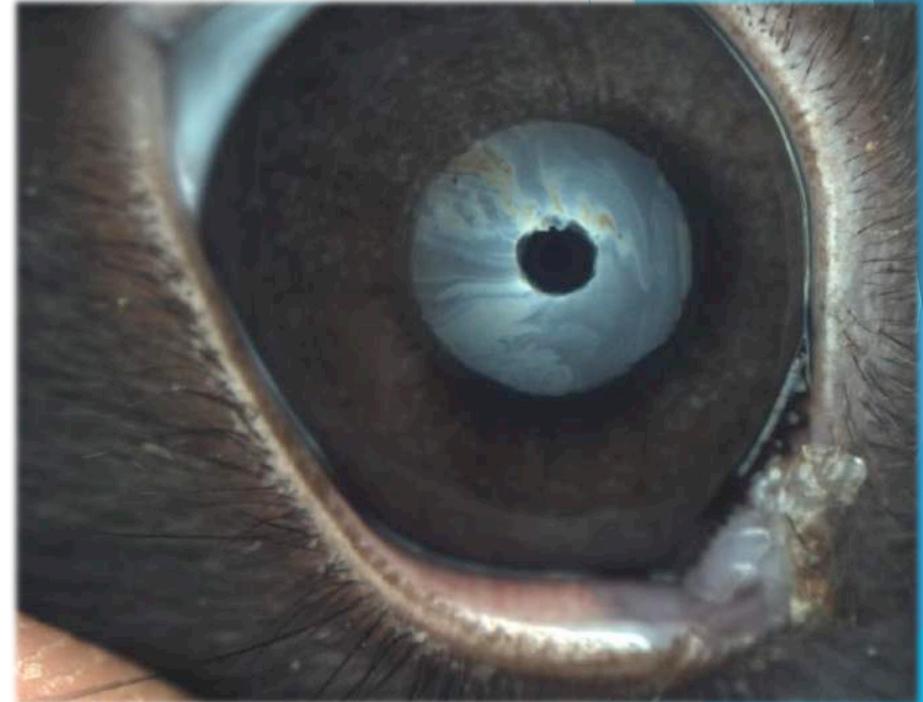
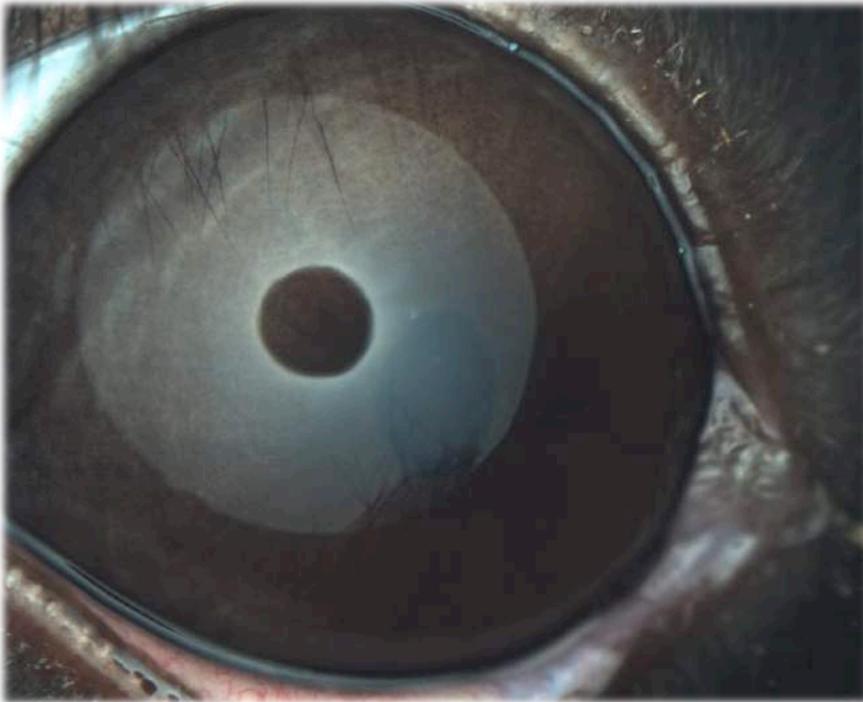
Meibography



Interferometry

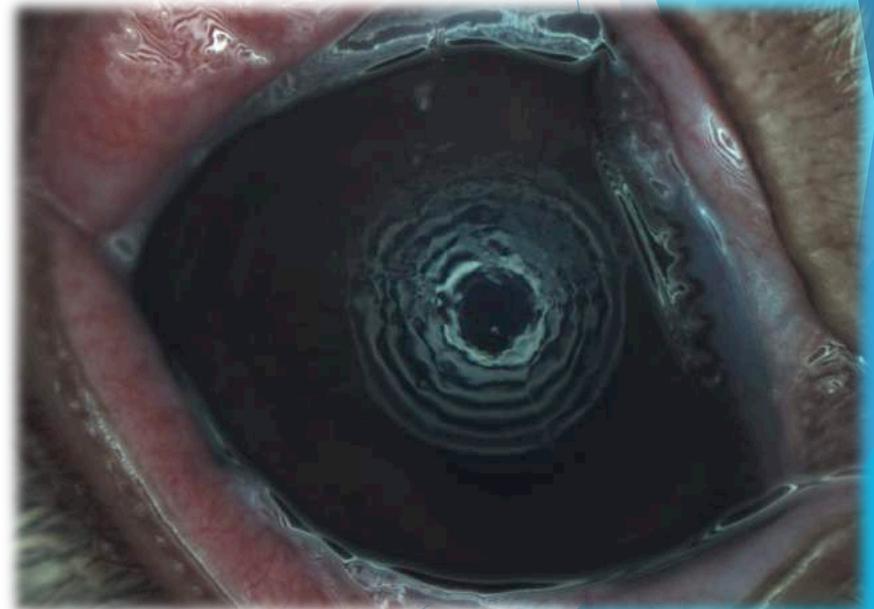
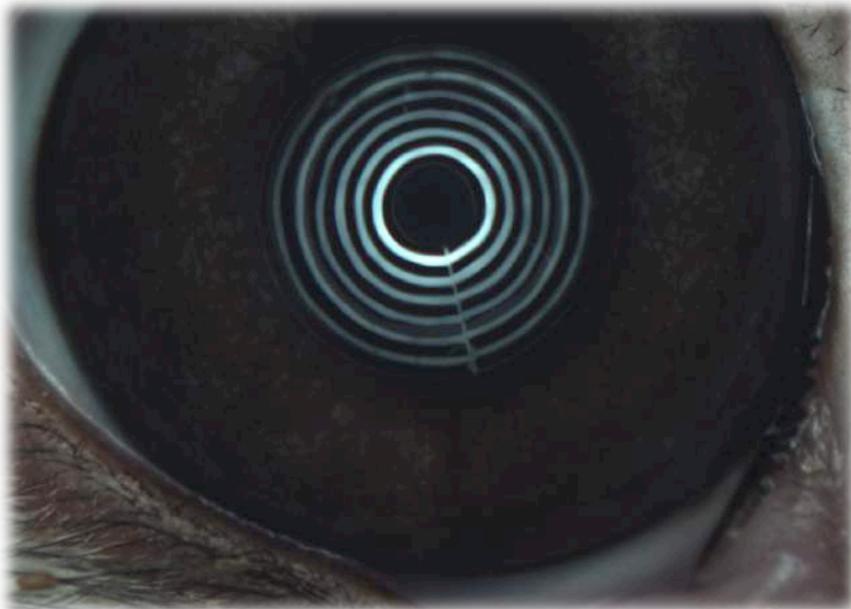


Interferometry



Placid-disk topography

The “Placid- disk topography” is used for the study of the corneal surface, and serves to highlight corneal deformations often due to chronic inflammation of the eye.





Description	Appearance	Thickness
1) Gray, transparent, not reflective	Wide mesh pattern, marble	15 nm
2) Gray, dense and reflective	Tight mesh pattern, marble	30 nm
3) Whitish with horizontal and vertical waves	Flow pattern in motion	30-80 nm
4) White / bluish with horizontal waves	Dense and stable pattern	80 nm
5) Pastel colors on a transparent gray background	Blu, yellow, brown fringes	80-140 nm
6) More intensive color with horizontal waves	Fringes of variable color	140-370 nm



Thank you for attention

