



An Overview of Eye Disorders in Frenchies Part One



Frenchies are prone to eye problems from a number of different causes. Their flat face, protruding eyes and curious nature predispose them to ocular diseases. Trauma, irritation from foreign particles, congenital, genetic disorders and systemic disease are common causes of ocular disease. As a French Bulldog owner it is important to recognize eye problems early and seek immediate veterinary care. An accurate diagnosis and prompt treatment are essential for resolution, and be prepared to consider referral to a veterinary ophthalmologist if indicated.

Anatomy of the Canine Eye

The eye is a complicated structure, and it is made up of a number of integral components which all function together to allow vision. It is a complex optical system which allows light from the environment to enter the eye through the protective cornea layer. Light then

diffuses through the fluid anterior chamber to the iris (a diaphragm which regulates light intensity), then through the lens, which focuses the image. The retina converts this image to a set of complex electrical signals and sends these signals to the brain via the optic nerve. The supporting structures of the eye help protect the eye and keep it in working order. The lids and eyelashes protect the eye; extraorbital muscles move the globe; tear (lacrimal) glands keep the cornea cells moist and functional, and help rinse away foreign particles.

Components of the eye

- Eyelids
- Orbit and globe (includes sclera, extraocular tissue, bony orbit)
- Conjunctiva
- Tear ducts and glands
- Cornea
- Anterior and posterior fluid chambers
- Uvea (includes the iris and ciliary body)
- Lens
- Fundus (the retina and optic nerve)

Signs of Eye Disease

Many different ocular problems can present with similar symptoms. Frenchies can often have eyes which appear to bulge from their face and they can have minor tearing. Eyes with non-pigmented conjunctiva may appear redder. It is important to know what a normal appearance is for your dog.

Red eye – This is excessive redness of the conjunctiva, or sclera, which can indicate conjunctivitis, corneal ulcer, glaucoma.

Tearing excessively or abnormal discharge – Eyes tear in response to pain, irritation or blocked tear ducts. Abnormal discharge suggests infection, dry eye, conjunctivitis.

Squinting – Is a sign which suggests pain. This pain can be from anywhere in or around the eye.

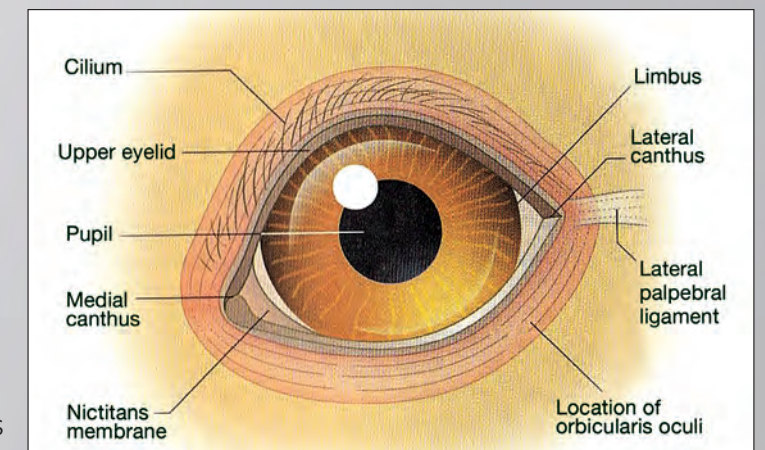
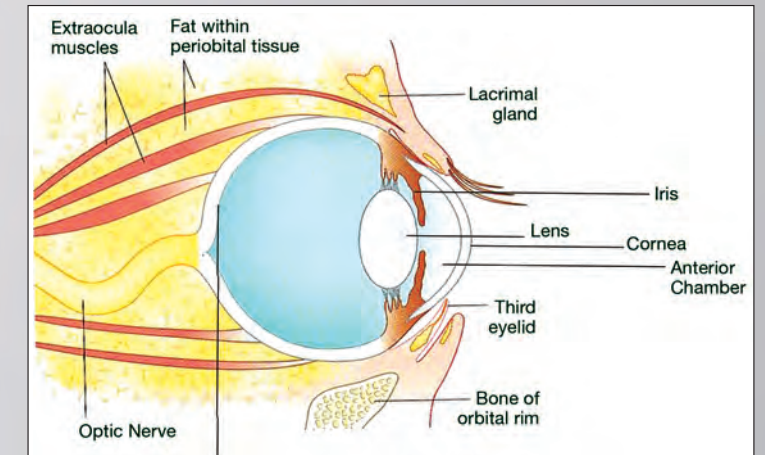
Swollen lids – This is seen often secondary to rubbing the eye, infection or allergic reaction. If the eye is smaller or sunken the lids may falsely appear swollen.

Cloudy eye – This can be from a number of things. It may be from a corneal lesion (superficial keratitis, an ulcer, dry eye), glaucoma or inflammation of the anterior chamber (uveitis)

Sudden blindness – This may be from glaucoma, retinal trauma, congenital retinal disease, an acute cataract or a brain lesion.

Discolored red or yellow eye – Fluid (blood or pus) in the anterior chamber will make the eye look red or yellow. A lens luxation or a traumatic, deep tear to the cornea may also discolor the eye.

Bulging or sunken eye – The eye will appear larger from swelling of extraocular tissues or glaucoma. A



sunken eye is often from nerve damage, inflammation or severe pain.

Diagnostic Tests Commonly Used

Direct and indirect ophthalmoscope – uses a hand held instrument called an ophthalmoscope, which allows visualization of the back of the eye (the fundus). The direct ophthalmoscope is also used for exam of the surface of the eye, because it provides light and magnification.

Schirmer tear test – a paper strip placed in the eye one minute to measure tear production.

Tonometry – measures the ocular pressure. French Bulldogs are normally a bit higher than other dogs because of their brachcephalic anatomy.

Nasolacrimal duct evaluation – normal tear drainage can be assessed using fluorescein dye. The green dye will appear in the corresponding nostril within five minutes if the duct is draining tears normally.

Fluorescein stain of cornea – this dye will adhere to the surface of the eye if there is a corneal abrasion.

The dye is bright green, but non-toxic and water soluble. Very deep corneal lesions may not take up stain.

Cytology of conjunctiva and cornea – A sample of cells from the eye are examined under a microscope to determine if there are abnormal cells or infectious organisms present.

Congenital or Inherited Ocular Problems

These are conditions which are commonly seen in Frenchies and seem to have a hereditary component. Overall, Frenchies have few severe inherited diseases. Most of the eye problems they have are related to their brachycephalic anatomy. The one most common genetic disorder is juvenile cataracts.

Juvenile Cataracts – A cataract is a clouding over of the lens and appears as a white spot, or triangular opacity, on all or part of the pupils, which may or may not be symmetrical in both eyes. The normal lens is made up of transparent fibers (water and proteins) that are surrounded by a capsule. In utero abnormal development of the lens leads to changes in the protein structure and water content of the lens, resulting in the white opacity on the eye. Juvenile cataracts can be found either in young puppies or dogs up to three years of age. The cataracts may not progress and will only partially obscure vision. These non-progressive cataracts require no treatment except careful monitoring. Other forms of juvenile cataracts can progress rapidly to complete blindness. For the acute, progressive cataract, ophthalmic surgery is indicated to remove the affected lens material. This surgery (phacoemulsification) uses ultrasonic waves to turn the lens to liquid, which is then extracted through a small incision in the eye. This procedure requires general anesthesia and should be performed by a board certified veterinary ophthalmologist.

A DNA test has been developed by the Animal Health Trust which identifies if your dog carries the gene for juvenile cataracts. Your pet may have two copies of the normal gene (clear), may have one normal gene and one affected gene (is a carrier, and carries the gene for cataracts but will not have the disease), or have two abnormal genes (be affected, and will one day develop cataracts). Puppies born of two clear parents can only be clear and do not need to be tested. Puppies born of one clear and one affected parent should be DNA tested before being sold. Carriers should not be bred together. Affected pets should never be bred. By testing breeding dogs and bitches we can hopefully prevent this disease from occurring in our beloved Frenchies.

Glaucoma is a possible sequel to cataracts. Glaucoma is a serious condition in which the fluid in the anterior portion of the eye is not draining normally. It is seen in Frenchies associated with other ocular conditions or from systemic disease. This is called secondary glaucoma. Primary glaucoma is caused by malformation of the drainage angle of the eye. This is an inherited condition and has not been shown in the French Bulldog. The abnormal drainage of fluid in the anterior chamber of the eye results in an increase in ocular pressure. Glaucoma is often painful and requires immediate treatment as it can lead to irreparable blindness. Dogs with glaucoma often have subtle clinical signs; they may be lethargic and/or have a fever; there is often a red sclera and/or a cloudy eye; the eye may be partially closed, appear bulging, or be non-visual. It is important to determine the underlying cause of the glaucoma for effective treatment.

Predisposing causes of secondary glaucoma include uveitis (inflammation of the anterior chamber), lens luxation (often secondary to uveitis, trauma, or cataracts), ocular tumors, retinal detachment (trauma, infection), and hyphema (blood in the eye – often from trauma, infection). Treatment includes topical and systemic medications to reduce ocular pressure, inflammation, and pain. Treatment may be long term. I always prefer my patients be seen by a veterinary ophthalmologist so they can have the underlying cause of the glaucoma confirmed through advanced testing (e.g. ultrasound, gonioscopy).

In the next issue we will cover corneal, conjunctival and eyelid problems in Frenchies! 🇺🇸

*You may submit questions to Dr. Liz
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