

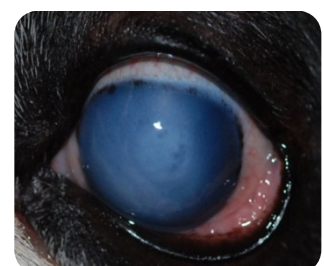
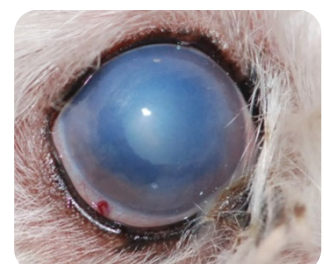
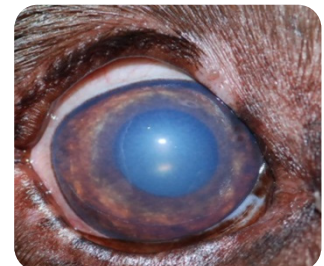
Corneal Endothelial Dystrophy/Decompensation



The cornea, the clear front of the eye, consists of three layers. The outer layer that contacts the tear film is the epithelium, and the inner layer that contacts the inside of the eye is the endothelium. Sandwiched between these two layers is the corneal stroma.

One of the functions of the epithelium and endothelium is to pump water out of the corneal stroma. When the cells in the epithelium and endothelium are working properly the cornea stays clear. Some older dogs and certain dog breeds with genetic disposition develop a condition known as corneal endothelial degeneration, in which the cells in the endothelium die. As a result the corneal stroma fills with water, causing it to turn blue. When the corneal stroma fills with water the condition is called corneal edema. This condition appears to be inherited in the Dachshund, Boston Terrier and Chihuahua dog breeds.

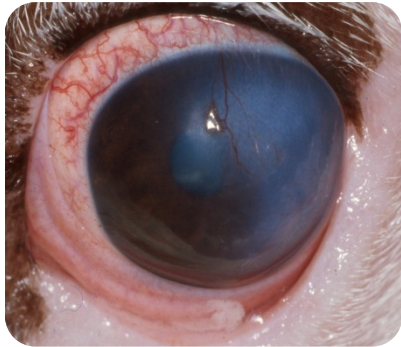
Examples of corneal endothelial dystrophy : from an early stage of the disease to the most Advanced (with apparition of corneal ulcers).



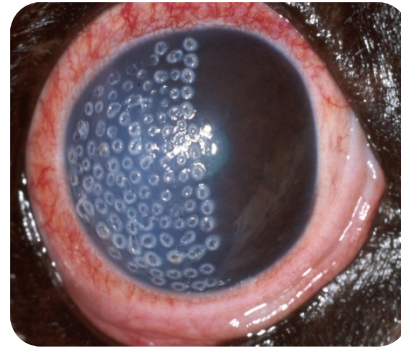
Two problems occur in animals with corneal edema from corneal endothelial degeneration. The first is decreased vision. A cornea with edema is cloudy and blurs vision, therefore the cloudier the cornea the worse the vision becomes. The second problem is the formation of corneal bullae, which are little blisters under the corneal epithelium. When these blisters burst they result in tiny corneal erosions which are painful, just like a scratch on the cornea.

The only medical treatment available to treat the corneal edema that results from corneal endothelial degeneration is hypertonic saline drops or ointment. When applied to the surface of the cornea it pulls some of the water out of the cornea. This treatment may be effective in some dogs if used three to four times daily.

If painful bulla formation occurs, a thermal keratoplasty may be performed. In this condition an ophthalmic cautery unit is used to make very small thermal scars on the surface of the cornea. This procedure reduces corneal bulla formation and subsequent corneal erosions.



Exemple of corneal endothelial dystrophy



An eye right after thermokeratoplasty, it will heal and then have less edema.

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