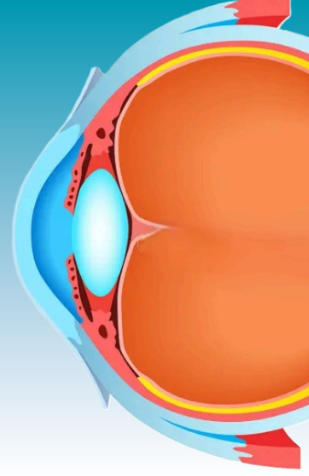




View Referrals

# Corneal Endothelial Degeneration



## What is Corneal Endothelial Degeneration (CED)?

The cornea is the clear windscreen part at the front of the eye, which is made of 3 different layers. Corneal endothelial degeneration (CED) is a condition that affects the innermost layer of the cornea – the endothelial cells. These cells pump fluid out of the cornea (and into the eye) to keep the cornea dehydrated and clear. As our pets age, these cells slowly die and do not regenerate. In most pets this decline is not significant and doesn't cause any problems. However, in some patients this decline is more rapid and extensive, and once enough cells are lost fluid begins to accumulate within the cornea (known as corneal oedema) causing cloudiness, progressive vision impairment and potential secondary problems like painful corneal ulcers.

## Causes & Risk Factors

The exact cause of CED is often unknown (idiopathic), but several factors can contribute:

- Age: The condition is more common in older dogs.
- Genetics: Any breed can be affected, but there's a slight over representation in Boston Terriers, Springer Spaniels, Chihuahuas, and Shih-tzus
- Previous eye inflammation or injury: Prior corneal damage can accelerate endothelial cell loss, e.g. glaucoma, trauma, or inflammation.
- Can both eyes be affected? Yes, but not necessarily at the same time.

## Common Symptoms

- Cloudy or Bluish Cornea: This is the most noticeable symptom.
- Vision Impairment: Your dog may bump into objects or seem hesitant in unfamiliar environments.
- Eye Irritation (not always present): Redness, excessive tearing, or squinting
- Corneal Ulcers: May develop in advanced stages.

## Diagnosis

- Slit-lamp biomicroscopy: Magnified examination of the cornea to confirm the presence of oedema and rule out other possible causes of corneal clouding.
- Tonometry: Measures the pressure inside the eye to rule out glaucoma.
- Pachymetry/corneal ultrasound: Measures corneal thickness (thickening indicates endothelial dysfunction).

## Management Options

While there is no cure for the condition, management can be used to help control symptoms, potentially slow progression, and prevent secondary complications.

- Hypertonic saline eye drops/ointment: These draw fluid out of the cornea, reducing swelling and improving clarity, and decreasing the chance of secondary ulceration. These medications usually require frequent and long-term application to prove effective.
- Corneal cross-linking: A form of light therapy is used to 'squeeze' the water out of the cornea. This can provide temporary improvement but does not reduce cloudiness, and does necessitate a general anaesthetic.
- Surgery: In more severe cases, your vet may recommend a conjunctival graft (Gundersen graft). This procedure involves carefully moving a section of the pink tissue that normally surrounds the eye (the conjunctiva) and suturing it next to the cloudy area of the cornea. Like a sponge, the tiny blood vessels in the graft help draw out excess fluid, which can improve corneal clarity and reduce the risk of ulceration or further damage.
- Environmental adaptations: Keep your dog's environment consistent to minimize disorientation as vision changes. Avoid rearranging furniture and ensure good lighting.

## Prognosis & Management

Sadly despite our best efforts CED is a progressive disease, and vision will likely continue to decline over time. However, with proper management, you can help maintain your dog's comfort and quality of life and most dogs will maintain enough sight to have a good quality of life.

