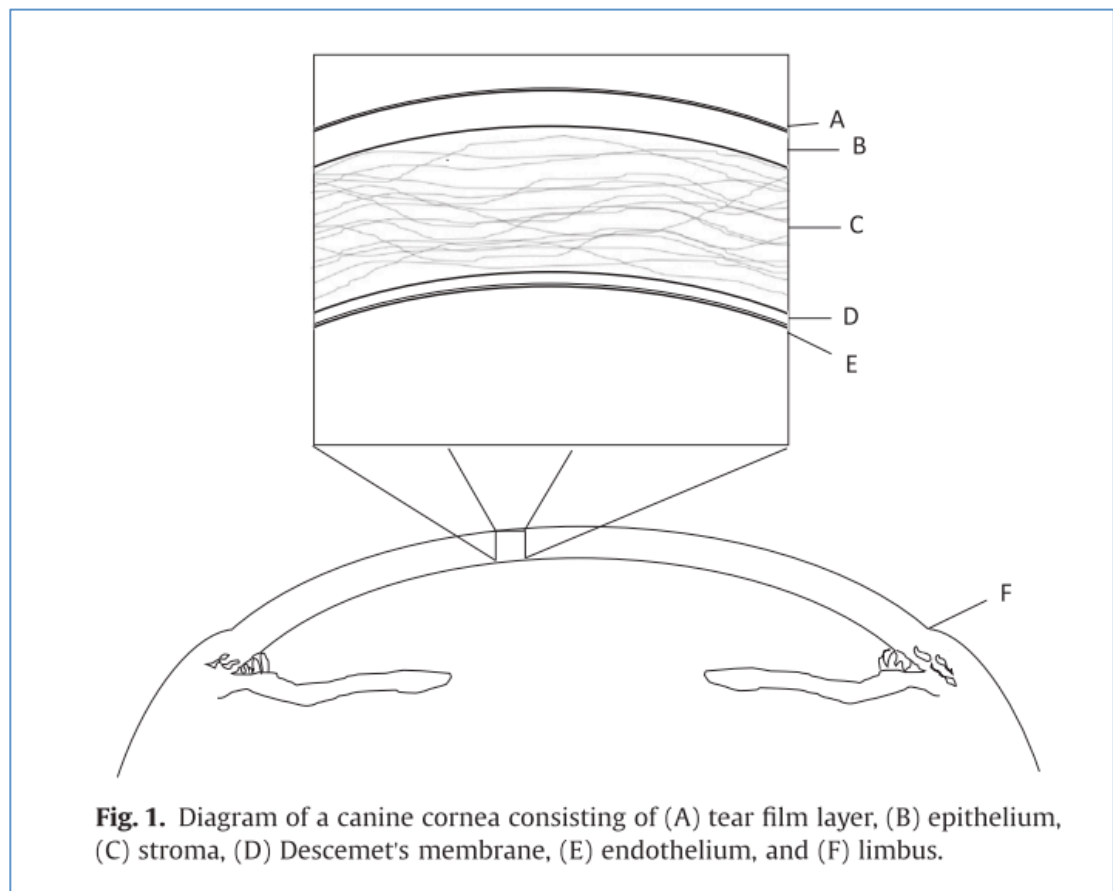


## Corneal Emergencies

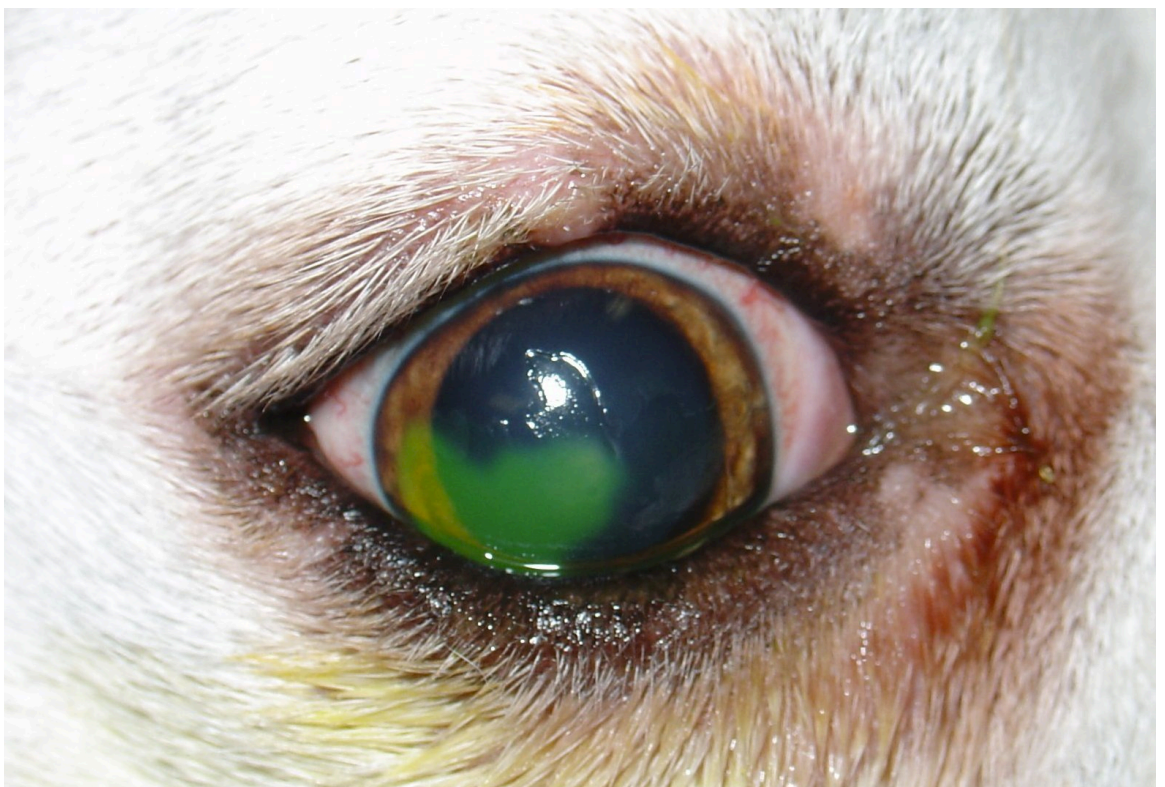
### Key Points

1. Corneal anatomy: Epidermal layer → stroma → Decemet's membrane → endothelium
2. Indolent ulcers (and especially spontaneous chronic nonhealing ulcers) require debridement and time for recovery
3. Surgical intervention
  - a. Progressive stromal ulcers >50% depth of the cornea
  - b. Desemetocle
  - c. Most corneal perforations
  - d. Most corneal lacerations
  - e. Penetrating corneal foreign bodies

### 1. Corneal anatomy



## 2. Indolent ulcers



Dry Q-Tip debridement: <https://youtu.be/smwhxp1fYRM>

Grid keratotomy: <https://youtu.be/WFVU7iAvZIU>

Diamond burr debridement: <https://youtu.be/flzNu18f1XA>

Ulcer healing takes 2-3w, though normal adhesion complexes are not formed for at least 1 year

3. Surgical intervention
  - a. Progressive stromal ulcers >50% depth of the cornea
  - b. Desemetocoele
    - i. Conjunctival graft, synthetic graft, corneal transposition graft
  - c. Most corneal perforations
    - i. If perforation >1-2mm, iris prolapse, leakage of the anterior chamber
  - d. Most corneal lacerations
    - i. If a stable fibrin plug is present, surgery may not be needed
  - e. Penetrating corneal foreign bodies
    - i. General anesthesia and a surgical microscope are recommended as leakage of the anterior chamber is likely and sutures may be necessary

## Questions

1. Fill in the blank:  
The \_\_\_\_\_ layer is the thickest layer of the cornea, and takes up \_\_\_\_\_ stain readily.
2. T/F: Descemet's membrane is the deepest layer of the cornea.
3. Indolent ulcers require \_\_\_\_\_, and are expected to heal in \_\_\_\_\_ with appropriate concurrent medical therapy
  - a. Surgical intervention, 1-2 weeks
  - b. Bacterial/fungal culture and sensitivity, 2-3 weeks
  - c. Blunt debridement, 2-3 weeks
  - d. Sharp debridement, 6-8 weeks
4. T/F: A 6 month old male castrated mixed breed dog presents to you following altercation with a cat: you note his left eye has a mild presence of hyphema and a punctate (0.5mm) perforation in the central corneal with no discharge and a stable lens. Your recommendation is for emergency Ophthalmology evaluation.

## Answers

1. Fill in the blank:  
The STROMAL layer is the thickest layer of the cornea, and takes up FLUORESCEIN stain readily.
2. FALSE: Descemet's membrane is the deepest layer of the cornea.
3. Indolent ulcers require BLUNT DEBRIDEMENT, and are expected to heal in 2-3 WEEKS with appropriate concurrent medical therapy
4. FASLE: A 6 month old male castrated mixed breed dog presents to you following altercation with a cat: you note his left eye has a mild presence of hyphema and a punctate (0.5mm) perforation in the central corneal with no discharge and a stable lens. Your recommendation is for emergency Ophthalmology evaluation.