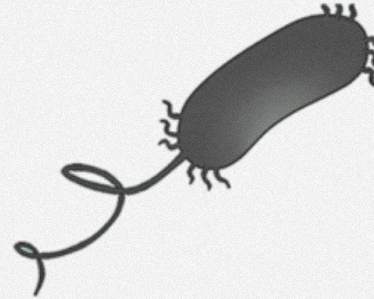


# Bacterial Keratitis (BK)

- **Serious** ophthalmological condition involving *bacterial infection* and *inflammation* of the cornea of the eye

## Bacterial Causes:

- 1) Staphylococcus aureus
- 2) Pseudomonas aeruginosa
- 3) Klebsiella
- 4) Enterobacter



**Risk Factors:** 1) Prolonged contact lens use, 2) Poor contact lens hygiene, 3) Sleeping with contact lenses, 4) Trauma, 5) Prior corneal surgery, 6) Recent corneal disease, 7) Using contaminated ocular medications, 8) Immunosuppression

## Epidemiology:

- Prevalence is related to *contact lens use*



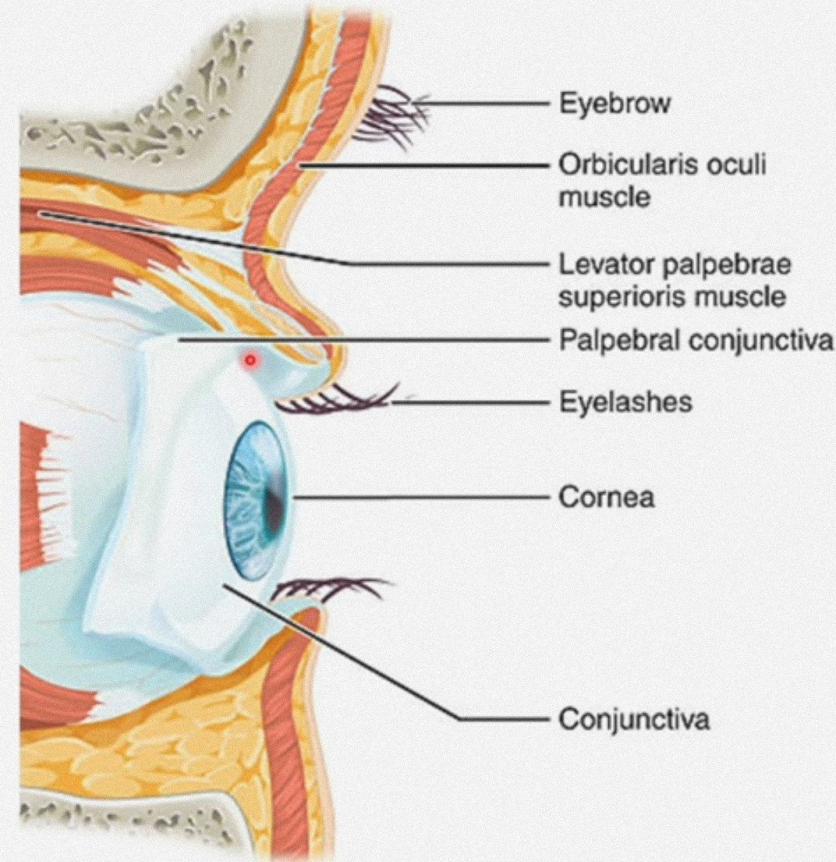
# Bacterial Keratitis: Anatomy

## Cornea

- Thin layer that covers the iris and pupil
- Functions as a barrier against particulates and organisms
- *Light passes through cornea*

## Conjunctiva

- Thin, transparent, lubricating layer that covers the outside of the eye (*bulbar conjunctiva*) and the inside of the eyelid (*palpebral conjunctiva*)
- The cornea and conjunctiva and other parts of the eye surface are colonized by *normal flora*, including certain species of streptococci, staphylococci, and corynebacteria

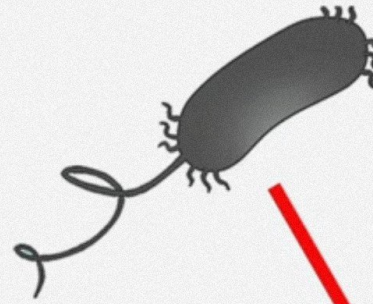


*Alteration or disruption of normal flora, interruption of corneal epithelium, and/or abnormal tear film*

Microorganism invasion into corneal disruption, and proliferation

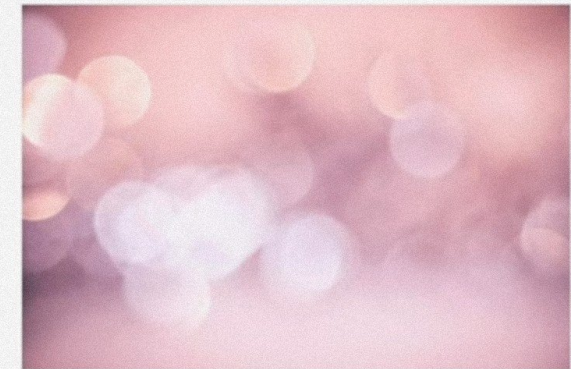
Area of infection can swell and begin to ulcerate

Neutrophils surround site



# Bacterial Keratitis: Clinical Features

- **Eye redness** (*Conjunctivitis*)
  - *Conjunctival injection*
  - *Conjunctival hyperemia*
  - *Either focal or diffuse*
- Eye pain
- Reduced vision (*blurriness*)
- Photophobia
- **Eye discharge**
  - *Adherent mucopurulent exudate*
- **Upper eyelid edema**



# Bacterial Keratitis: Other Features

## Other Ocular Findings:

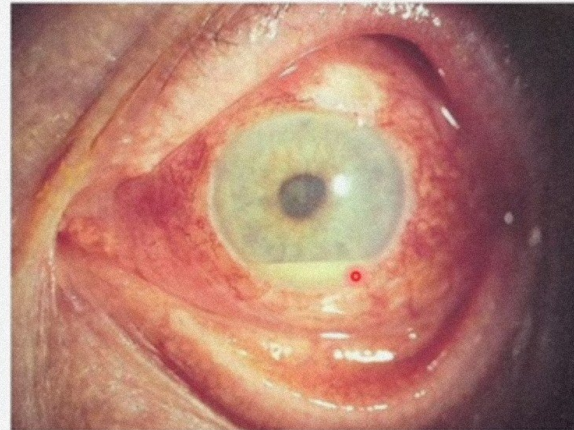
*Posterior synechiae*

Endothelial inflammatory plaque

Corneal infiltrate

Epithelial ulceration

*May have hypopyon*



## Complications:

- 1) Vision loss/blindness
- 2) Ocular perforation
- 3) Ulceration
- 4) Endophthalmitis
- 5) Corneal scarring

***Complications may occur rapidly within 24-48 hours***

# BK: Diagnosis & Treatment

**Early diagnosis and treatment are critical due to potential complications**

## Diagnosis:

- *Clinical diagnosis*
- Scrapings of corneal ulcer
- Culture, Gram stain, Giemsa stain
  - *Other samples may be collected*
- Corneal biopsy (*if deep stromal infiltrates*)
- *Slit lamp*



## Treatment:

- **Broad-spectrum antibiotic** eye drops (topical)
  - Tobramycin drops alternating with vancomycin or cefazolin drops (*more severe cases*)
    - *Important to taper and stop as patient heals*
  - *4<sup>th</sup> generation fluoroquinolones (moxifloxacin)*

