



Definition	Infection of the cornea by microbes, characterised by excavation of the corneal epithelium, Bowman's layer and stroma with infiltration and necrosis of the tissue. ¹	Inflammatory reaction of the cornea, characterised in its active stage by focal excavation of the epithelium, infiltration and necrosis of the anterior stroma. Bowman's layer, however, is intact. ²
Occurrence	Incidence of Microbial Keratitis (MK) in lens and non lens wearers is limited to few individuals per 10,000 wearers (4 to 5 events with daily wear; 20 to 21 with low DK extended wear) ^{3,4}	Rare in non-lens wearers; 25 times more frequent with DW in comparison to MK; 50 times more frequent with extended wear in comparison to MK (CCLRU/LVPEI data)
Symptoms	<ul style="list-style-type: none"> Moderate to severe pain of rapid onset Severe redness ('meaty' appearance) Decreased visual acuity if the lesion is on the visual axis Discharge (mucopurulent), tearing Photophobia Puffiness of lids 	<ul style="list-style-type: none"> Ranges from moderate to severe pain, foreign body sensation, irritation to asymptomatic Moderate to severe redness Tearing
Signs	<p>Infiltrate</p> <ul style="list-style-type: none"> size shape location depth surrounding cornea overlying epithelium endothelial involvement <p>Anterior chamber reaction Lid edema Bulbar and limbal redness Unilateral / bilateral</p>	<ul style="list-style-type: none"> Usually small, single, circular, focal infiltrate (up to 2mm) Circular, well-circumscribed Peripheral or mid-peripheral Anterior stroma (sub-epithelial) Diffuse infiltrates limited to anterior stroma Full thickness loss (when active) None <p>Only if severe; flare and cells Rare Moderate, localised Usually unilateral</p>
Aetiology	<ul style="list-style-type: none"> Microbial invasion and infection (bacteria, fungus, parasites)⁵ 	<ul style="list-style-type: none"> Toxins released by S.aureus colonising the contact lens surface⁶, bacteria not found on scraping or biopsy⁷ Overnight contact lens wear, lens material interaction with corneal surface
Risk Factors	<ul style="list-style-type: none"> Trauma^{8,9}, poor contact lens hygiene^{9,10}, overnight contact lens wear^{10,11}, immunocompromised states¹², swimming¹³ 	
Course & Management	<ul style="list-style-type: none"> Immediately discontinue lens wear Progressively worsens without treatment Corneal scrapings and antimicrobial therapy (e.g. fluoroquinolones) mandatory Monitor daily Resolves with scar, may be vascularised, vision loss may occur 	<ul style="list-style-type: none"> Discontinue lens wear until resolution Normally heals rapidly without intervention Close monitoring required (eg. within 24hrs on Day1) Antibiotics (if monitoring not possible) Resolves with scar ('bullseye' appearance)

CIRCLE & WIPE (with marker pen)

For each variable listed on the left, choose and circle the appropriate score from the grades across the page, ranging from green to red. Add the circled scores together to calculate the final score, and refer to probability index to guide your diagnosis.

	Microbial Keratitis (MK)					Contact Lens Peripheral Ulcer (CLPU)				
Best Corrected VA	No loss	0	<1 line loss	1	1-2 line loss	2	2-3 line loss	3	> 3 line loss	4
Ocular Adnexa										
Conjunctival Redness	None	0	1 quadrant	1	2 quadrants	2	3 quadrants	3	4 quadrants	4
Chemosis	None	0		-		-	Present	3		-
Discharge	None	0		-	Watery	2		-	Mucopurulent	4
Lid edema	None	0	Very Slight	1	Slight	2	Moderate	3	Severe	4
Infiltrate										
Size (mm)		0	<0.5	1	0.5-1.0	2	1.1-2.0	3	>2.0	4
Shape		0		-	Round	2		-	Irregular	4
Location		0	Peripheral	1	Mid-peripheral	2	Central	3	> 2 quadrants /Satellite lesions	4
Depth		0	Anterior stroma	1	Mid-stroma	2	Entire stroma	3	All layers	4
Overlying epithelial staining	Intact	0	Punctate	1		-		-	Epithelial defect	4
Anterior Chamber										
Ant.chamber/endothelium	None	0		-	Endothelial dusting	2	Flare/Cells	3	Keratic precipitates/Plaque/Hypopyon	4
Score		0	+		+		+		+	

Probability index for MK

- >25 - High probability of MK; needs urgent medical attention; corneal scrape and therapy mandatory
- 15 - 25 - Possible early MK or severe CLPU; refer immediately for medical attention
- <15 - Low probability of MK; monitor at frequent intervals over 24 hours; if condition stable or improving, continue frequent follow ups; if condition worsens, refer for medical attention immediately.

Note: For all events discontinue lens wear and do not patch the eye. Save lens case/solutions for microbiological analysis.

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= Total