

# Recurrent Corneal Erosion Syndrome (RCES)

Disclaimer: This Clinical Practice Guideline ('CPG') was written for use in The Royal Victorian Eye and Ear Hospital Emergency Department. It should be used under the guidance of an Ophthalmology or ENT registrar. If clinical advice is required, please contact the Eye and Ear Admitting Officer for assistance: EYE: +61 3 9929 8033; ENT: +61 3 9929 8032. Links to internal Eye and Ear documents cannot be accessed from the website CPG.

See also: red eye, corneal abrasion

## Description:

Recurrent corneal erosion syndrome (RCES) is an epithelial disorder characterised by loose/irregular epithelium or a frank epithelial defect, often on a background of past epithelial trauma or corneal dystrophy.

## Red Flags:

- Exclude infectious keratitis
- Evert upper lids – rule out subtarsal foreign body
- Examine both eyes to assess for epithelial basement membrane dystrophy (or other corneal dystrophy)

## How to Assess:

### History:

- Symptoms: recurrent attacks of acute ocular pain, photophobia, foreign body sensation and epiphora. Typically occurs upon waking.
- Aetiology:  
Abnormal corneal epithelial healing following damage to the corneal epithelium and epithelial basement membrane. Risk factors include:
  - Previous traumatic corneal abrasion (fingernail, paper, tree branch, etc.)
  - Any ocular intervention where there is a potential for a corneal epithelial defect, e.g. kerato-refractive surgery
  - Corneal dystrophy (see below)
  - A combination of the above

### Examination:

- Conjunctival injection
- Localised area of irregular/loose corneal epithelium or a corneal defect staining with fluorescein.
  - Epithelial changes may resolve within hours of onset of symptoms so an abnormality may be difficult to detect at time of examination. Fluorescein dye may show an area of irregular staining in the area of the erosion.
- Corneal dystrophy – anterior/epithelial basement membrane dystrophy
  - Examine both corneas for epithelial microcysts, map, dot and fingerprint shaped opacities
- Document size of epithelial involvement (before +/- after debridement, if performed)

## Acute Management:

- If no epithelial defect is present or has healed, commence lubrication:
  - Regularly during the day (4-6 times a day) with non-preserved artificial tears
  - Use a paraffin-based ointment before bed (e.g. Polyvisc®, Ircal®) for 3-6 months to prevent recurrences
- Antibiotic ointment or drops (chloramphenicol) QID until epithelial healing is complete
- If epithelium is loose, perform epithelial debridement with a sterile cotton-tipped applicator, hypodermic needle or blade under topical anaesthesia, (e.g. oxybuprocaine). This may enlarge the epithelial defect significantly if the surrounding epithelium is abnormal.
- Insert a bandage contact lens (BCL) if the epithelial defect is large. Antibiotic drops (as above) are essential while contact lens is in situ. Discuss and document infection risk associated with extended contact lens wear.
- For analgesia, consider:
  - Cool compresses
  - Oral analgesia, (e.g. regular paracetamol)
  - Cycloplegia, (e.g. cyclopentolate 1% eye drops, stat dose or TDS ongoing)
  - Never prescribe topical anaesthetic drops for home use
  - If erosions recur despite the above measures, refer to the Corneal Unit after discussion with the Corneal Fellow.

## Follow up:

- May not be required in mild cases with a small epithelial defect
- Patients with large erosions or a BCL in situ must be reviewed in 5-7 days

## Discharge instructions:

- Warn patients about the likelihood of recurrence and the need for regular lubrication (particularly at night-time) to minimise recurrences
- Advise patient to return if pain worsens or vision deteriorates
- All patients with a BCL must be told of the importance of follow-up, especially if increased pain, due to the risk of infectious keratitis

## Additional notes:

See [Recurrent Corneal Erosion Syndrome Factsheet](#)

## Evidence Table

Author(s)	Title	Source	Level of Evidence (I – VII)
Maharana PK, Dubey A, Jhanji V, Vajpayee RB	The diagnosis and management of recurrent corneal erosion syndrome	Expert Review of Ophthalmology 2015;10 (5), pp 453-63	VII
Ewald M and Hammersmith KM	Review of diagnosis and management of recurrent erosion syndrome	Current Opinion in Ophthalmology 2009; 20 (4), pp 287-91	VII
Denniston AKO and Murray PI	Oxford Handbook of Ophthalmology (2 <sup>nd</sup> edition)	Oxford University Pre	VII
	Wills Eye Manual 6 <sup>th</sup> edition 2012		VII

## The Hierarchy of Evidence

The Hierarchy of evidence is based on summaries from the National Health and Medical Research Council (2009), the Oxford Centre for Evidence-based Medicine Levels of Evidence (2011) and Melynck and Fineout-Overholt (2011).

- I) Evidence obtained from a systematic review of all relevant randomised control trials.
- II) Evidence obtained from at least one well designed randomised control trial.
- III) Evidence obtained from well-designed controlled trials without randomisation.
- IV) Evidence obtained from well-designed cohort studies, case control studies, interrupted time series with a control group, historically controlled studies, interrupted time series without a control group or with case series.
- V) Evidence obtained from systematic reviews of descriptive and qualitative studies.
- VI) Evidence obtained from single descriptive and qualitative studies.
- VII) Expert opinion from clinician, authorities and/or reports of expert committees or based on physiology.

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