# Help minimize Covid-19 spread; Red Eyes in Children:
## *A Quick Refresher*

Virtually any infectious red eye can be a sign of COVID-19. Therefore, for the duration of the pandemic and until 1 negative PCR test, those patients with non-traumatic red eyes are assumed to be COVID-19 patients.

Our goal is to help keep patients with red eyes (who could have COVID-19) out of the hallways, out of the hospital and away from our vulnerable eye clinic patients.

Therefore, in an effort to minimize COVID 19 spread we will not be able to see red eyes in the MUCH Glen Eye Clinic or at the TCC until further notice. Below is a guide to help decide who requires urgent ophthalmologic consultation with slit lamp in the ED or next day MDH versus virtual outpatient follow-up. Please encourage your trainees to use the card stamper, with a legible consult question including current diagnoses and treatment thus far. As always, when in doubt, please clarify with Ophthalmology on-call.

Please consult this refresher before calling Ophthalmology. Although this information relates to non-traumatic red eyes for kids, it may also help you with adult red eyes, parents and even staff!

Prepared by Rob Koenekoop MD PhD June 17, 2020.Presented to PED core group, June 18, 2020.
Distributed via email to all MCH Pediatricians aThis will be given to all Paediatric ER and all ward physicians by email.

**There are many causes of red eyes in children, but the 9 MAIN causes of non- traumatic red eyes are:**

*(in approximate order of frequency*)

1. Adeno-viral conjunctivitis
2. Bacterial conjunctivitis and blepharitis
3. Lacrimal obstruction and neonatal conjunctivitis
4. Herpes virus conjunctivitis
5. Allergic conjunctivitis
6. Sty (hordeolum)
7. Vernal conjunctivitis
8. Episcleritis
9. Toxic conjunctivitis
10. Uveitis and glaucoma

## Clinical paradigms:

### Scenario #1

Child has an acute red eye, swollen conjunctiva, with a swollen non-red lid, slightly painful, watery DC. There may be white dots on the cornea and/or a white or yellow membrane in the conjunctival fornix.
*Clinical Pearl:* In the ophthalmology clinic we feel that if there is a preauricular node, it is more likely viral.

**DX is usually ADENOVIRUS (but can be another virus).**

**Management**: crushed ice and natural tears QID (no antibiotics!), no school/daycare for 5-7 days, alert family of danger of transmission. If COVID-19 is suspected, swab the conjunctival fornix for culture or PCR,

in addition to NP swab. Remove the membrane with a Q-tip or call the Ophthalmologist. If referred to Ophthalmology, virtual F/U in 2-3 days.

## Scenario #2

Child has a sub-acute red eye, swollen conjunctiva, with swollen non-red lid, slightly painful, sticky, yellow pus D/C.

*Clinical pearl:* In the ophthalmology clinic we feel that if there is NOT a preauricular node it is more likely bacterial.

**DX is usually BACTERIAL CONJUNCTIVITIS (usually Staph aureus or Strep or other).** **This includes lacrimal obstruction (NLDO) and Ophthalmia neonatorum.**

bacterial conjunctivitis

**Management:** Erythromycin, Ciloxan or Fucidin ointment QID for 5 days, then stop, no school/day care for 3 days, alert family. Swabbing the conjunctival fornix for bacterial culture may be helpful for the very young and resistant cases. NLDO requires massage and antibiotic cream as above. O.R. may be necessary at age one year. If referred to Ophthalmology, virtual F/U 2-3 days.

If Ophthalmia neonatorum suspected, call Ophthalmology, it is a rare and life-threatening conjunctivitis. Babies are admitted with IV antibiotics, after blood cultures and conjunctival swabs.

Ophthalmia neonatorum

## Scenario #3

Child has an acute red eye, swollen conjunctiva, with swollen non-red lid, slightly painful, watery DC. Plus, small pustules near the lid or near the eye.

*Clinical Pearl:* Often associated with preauricular node.

**DX is usually HERPES VIRUS.**

**Management:** Call Ophthalmology. Acyclovir or alternate anti-viral PO, and Acyclovir cream to skin lesions and skin 5 x per day until dry, usually 5-7 days. Viroptic eye drops QID, NO cortisone, no school/day care until lesions are dry, alert family. Swabbing the conjunctival fornix for HSV culture may be helpful. Fluorescein may show corneal dendrites on slit lamp exam. Virtual F/U 2-3 days.

## Scenario #4

Child has ITCHY, acute red eyes, swollen conjunctiva, with swollen non-red lid, watery discharge, seasonal. Black marks under the eyes ("allergic shiners") are often evident!

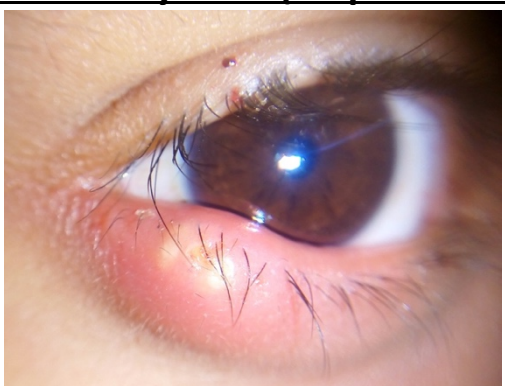
**DX is usually ALLERGIC OR HAY FEVER CONJUNCTIVITIS.**

**Management:** crushed ice to eyes QID, remain indoors, preferably with air-conditioning, at certain times of day and Patanol (from fridge!) 1-2 drops BID (Pataday not as good) for 1-2 weeks into dry eyes, wipe! F/U PRN.

## Scenario #5

Child has acute red eye, with swollen non-red lid, slightly painful, bump on eye lid, red and painful, but no cellulitis.

**DX is usually STYE (Staph aureus).**



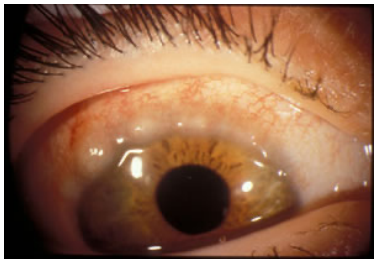
**Management:** Erythromycin, Ciloxan or Fucidin ointment QID in the eyes and on the lids after hot compress QID. Referral to Ophthalmology discretionary – occasionally requires surgical drainage. If referred to Ophthalmology, virtual F/U 1 month.

## Scenario #6

Child has an ITCHY, chronic red eyes, swollen conjunctiva, with swollen non-red lid, watery D/C. Seasonal. Black marks under the eye ("shiners" are often evident!). Important is that there is no response to allergy treatment.

On the cornea at the top are plump white dots (collections).

**DX is usually VERNAL CONJUNCTIVITIS.**



**Management:** crushed ice to eyes QID, remain indoors, preferably with air-conditioning, at certain times of day and Patanol (cold from the fridge!) 1-2 drops BID for 1-2 weeks into dry eyes, wipe the eye dry! Also start Maxidex (dexamethasone) 1 drop QID, and Maxidex ointment qhs for 1-2 weeks (no repeats). Virtual F/U 1 week. Cyclosporin drops may be added later by Ophthalmology.

## Scenario #7

Acute onset of red eye, but only in a sector, like a quarter of the conjunctiva is red and slightly painful. May be associated with Adeno virus, JRA, or other systemic diseases.

**DX is usually EPISCLERITIS.**

**Management:** mild corticosteroid, like FML forte or Pred Forte TID 1-2 drops for 1 week. Then taper over 3 days, then stop. No repeats. Consider Ophthalmology referral. F/U is PRN.

## Scenario #8

Chronic, longstanding red eye, poor response to antibiotic treatment, history of trying multiple drops, painful, deep red, redder below than above the eye, also may have mild inferior corneal keratitis. Difficult diagnosis.

**DX is usually TOXIC CONJUNCTIVITIS** (meds or preservative toxicity).

**Management:** stop all drops and observe, +/- natural tears BID (preservative free). Refer to Ophthalmology, virtual FU 1 week.

## Scenario #9

Painful red eye, with cloudy cornea, headache, photophobia, haloes around lights, headache on the eye brow, family history of glaucoma, systemic JRA, sometimes the eye is a little bit bigger.

**DX is usually UVEITIS (IRITIS) and/or GLAUCOMA.**

**Management:** Call Ophthalmology. In the context of the pandemic to facilitate further systemic work-up, please consider Covid-19 Swab. Treatment can be complex and depends on the ultimate diagnosis.