Table 1. Differential diagnosis list of acute red eye in children, with key features and management. Rows with red shading denote sight-threatening conditions that require urgent referral to ophthalmology for confirmation of diagnosis and management.

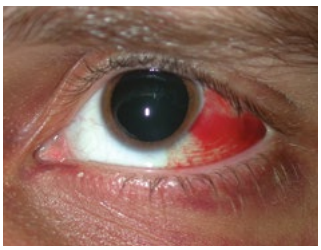
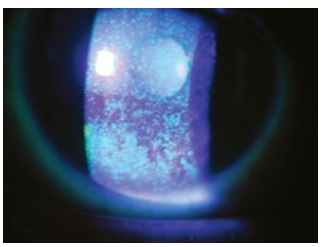
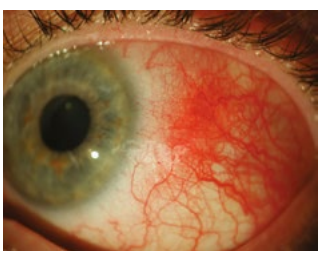
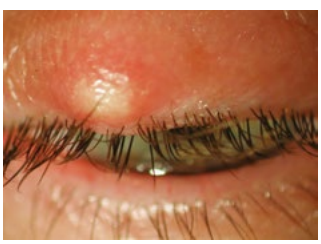
Key symptom	Discharge	Key features	Diagnosis	Management	
Painless	Nil	Blood under bulbar conjunctiva; spontaneous or traumatic	Subconjunctival haemorrhage	Observation – should clear in 1–3 weeks; if recurrent, investigate cause (eg bleeding disorder). Consider non-accidental injury.	
	Watery	First year of life; elevated area over lacrimal sac	Nasolacrimal duct obstruction	Instruct the parent to perform lacrimal sac massage twice a week by pressing his or her index finger on the child's inner corner of eye in an inward and downward fashion. The majority of cases resolve within first year of life. Refer to ophthalmology for probe and syringing if persistent or there are signs of inflammation/infection.	
Irritation	Nil	Gritty sensation; mild redness; mild vision reduction	Dry eye	Regular lubricants including drops and ointment at night depending on the severity. If dosing of drops is frequent (more than six times per day), preservative-free artificial tears should be used. Check for the presence of contributing disorders such as blepharitis and treat accordingly.	
	Nil	Sectoral congestion of episcleral vessels; unilateral; mild ocular tenderness	Episcleritis	Observation. Lubricants if there is irritation. If it persists for more than one week, use a mild topical steroid four times per day or oral nonsteroidal anti-inflammatory drugs.	
	Nil	Eyelid nodule; mild discomfort; single or multiple in upper or lower lids	Chalazion	Conservative management with warm compresses and gentle massage for five minutes, twice a day. Refer to ophthalmology for incision and curettage, if not resolving after three months or showing signs of cellulitis.	

Table 1. Differential diagnosis list of acute red eye in children, with key features and management (cont'd). Rows with red shading denote sight-threatening conditions that require urgent referral to ophthalmology for confirmation of diagnosis and management.

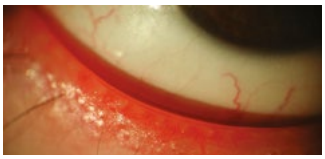
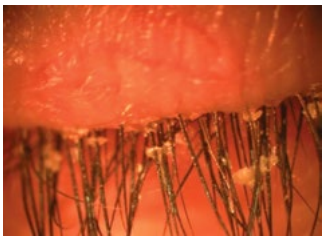
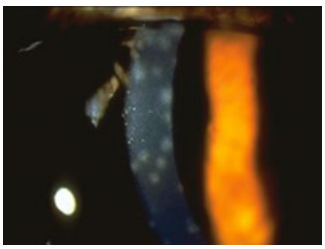
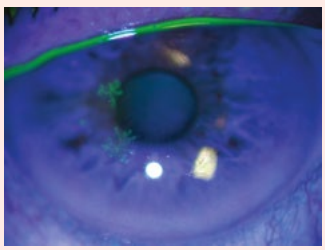
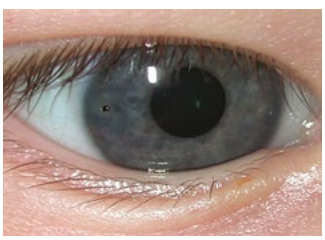
Key symptom	Discharge	Key features	Diagnosis	Management	
Irritation (cont'd)	Watery	Inflammation of lid margins; crusting on lashes; conjunctival inflammation; blepharo-conjunctivitis	Blepharitis	Conservative management with warm compresses, gentle massage and careful eyelid cleaning with proprietary eyelid wipes.	 
	Watery	Bilateral conjunctival inflammation ± chemosis ± eyelid swelling; periauricular lymphadenopathy; small corneal sterile infiltrates	Viral conjunctivitis	Self-resolving over 1–3 weeks. Saline washes, lubricants and cool compresses as necessary. Advise patient and/or parents of infection control measures (eg washing hands before and after touching eyes, avoiding sharing towels). Contagious until eye stops tearing.	
	Watery	Reduced vision; photophobia; dendritic pattern on cornea with fluorescein stain	Herpes simplex keratitis	Acyclovir ointment five times per day for 7–10 days; infection control measures. Refer to ophthalmology for further investigation if worsening.	
	Watery	History of inciting event; foreign body sensation; ± visible foreign body (<1 mm) on cornea/conjunctiva	Corneal/ conjunctival foreign body (small)	Patient needs to be able to hold eye still. May require a general anaesthetic for younger patients. Instil topical anaesthetic such as oxybuprocaine 0.4% into the eye; foreign body may be removed with an anaesthetic-soaked cotton bud, short 25G hypodermic needle or a 15 blade; if rust ring, remove if safely possible; apply antibiotic ointment such as chloramphenicol 0.5% to the eye and then double pad. Follow-up next day.	 

Table 1. Differential diagnosis list of acute red eye in children, with key features and management (cont'd). Rows with red shading denote sight-threatening conditions that require urgent referral to ophthalmology for confirmation of diagnosis and management.

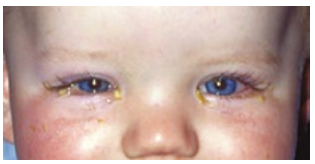
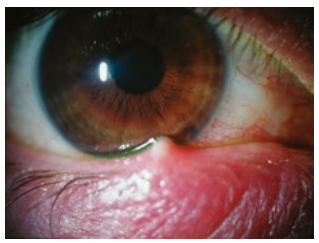
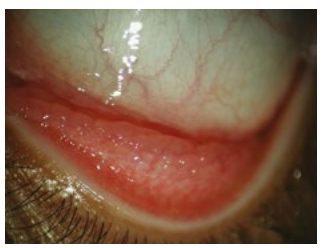
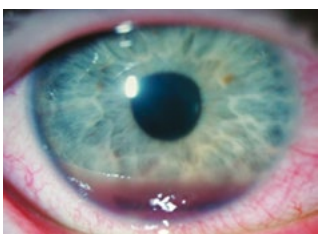
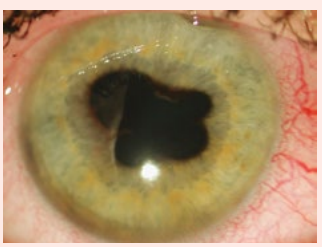
Key symptom	Discharge	Key features	Diagnosis	Management	
Irritation (cont'd)	Purulent	Conjunctival inflammation; sticky discharge on eyelids; cornea clear with no infiltrates	Bacterial conjunctivitis	Topical broad-spectrum antibiotic such as chloramphenicol 0.5% eye drops 4–6 times per day for 5–7 days; infection control measures.	
	Purulent	Localised tender swelling on eyelid	Stye	Topical broad-spectrum antibiotic such as chloramphenicol 0.5% eye drops four times per day for seven days. Epilate infected follicle if possible. Conservative management with warm compresses, gentle massage and careful eyelid cleaning with proprietary eyelid wipes. Refer to ophthalmology if signs of cellulitis.	
Itching	Watery	Seasonal pattern; history of atopy; papillary inflammation of tarsal conjunctiva	Allergic conjunctivitis	Topical antihistamine/mast cell stabiliser such as ketotifen 0.1% twice per day; cooled topical lubricants. Avoid rubbing eyes and identify and limit allergen exposure.	
Pain	Nil	Conjunctival inflammation; ± subconjunctival haemorrhage; ± epithelial defect; ± hyphaema; ± eyelid bruising	Blunt trauma	Management depends on the severity of the injury. Refer to ophthalmology if reduced vision, loss of red reflex, pupil irregularity, hyphaema or reduced extraocular movement.	
	Nil	Photophobia; ± reduced vision; conjunctival and ciliary inflammation; white cells in anterior chamber ± hypopyon; irregular pupil from posterior synechiae; history of autoimmune disease	Uveitis	Urgent referral to ophthalmology to confirm diagnosis, exclude endophthalmitis and check intraocular pressure. If sterile inflammatory cause, intensive topical steroids and pupil dilation to break posterior synechiae ± management of systemic disease in conjunction with rheumatologist.	

Table 1. Differential diagnosis list of acute red eye in children, with key features and management (cont'd). Rows with red shading denote sight-threatening conditions that require urgent referral to ophthalmology for confirmation of diagnosis and management.

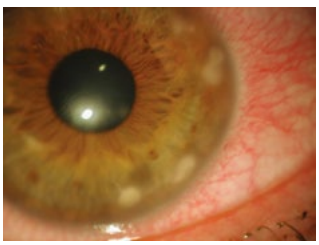
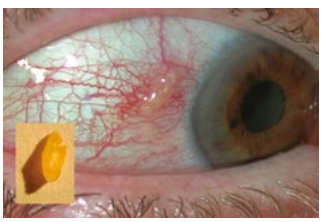
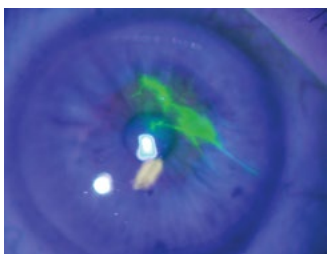
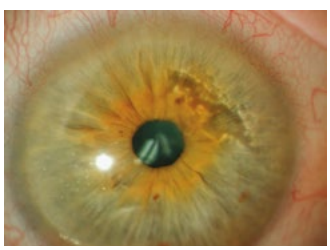
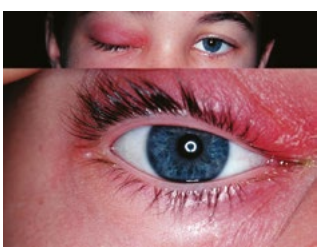
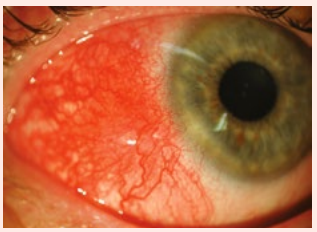
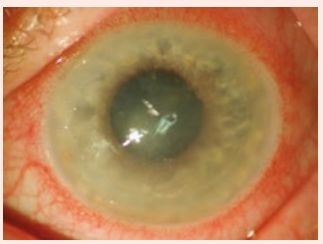
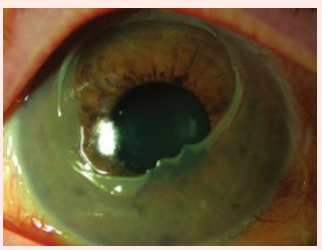
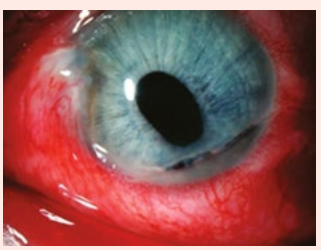
Key symptom	Discharge	Key features	Diagnosis	Management	
Pain (cont'd)	Watery	Localised conjunctival inflammation; superficial corneal infiltrate/s with minimal staining	Marginal keratitis	Topical steroids such as fluorometholone 0.1% four times per day for 5–7 days. Conservative management of blepharoconjunctivitis with warm compresses, gentle massage and careful eyelid cleaning with proprietary eyelid wipes. Refer to ophthalmology if suspected infection or contact lens use.	
	Watery	History of inciting event; foreign body sensation; visible foreign body (>1 mm) on cornea/conjunctiva	Corneal/ conjunctival foreign body (large)	Removal technique as for smaller foreign body. Refer to ophthalmology if child is uncooperative, uncertainty with removal, signs of aqueous leak on fluorescein staining or red flags.	
	Watery	History of inciting event; epithelial defect with fluorescein stain	Corneal abrasion	For larger defects (>2 mm), topical antibiotic ointment and double eye-pad overnight. For smaller defects (<2 mm), topical antibiotic drops such as chloramphenicol 0.5% four times per day for 5–7 days. Need to exclude foreign body. Refer to ophthalmology if suspected infection or red flags.	 
	Watery	Red, swollen, tender eyelid; white eye; no proptosis; full eye movement with no pain; mild fever; irritability	Preseptal (periorbital) cellulitis	Oral antibiotics such as flucloxacillin for 10 days. Review within 48 hours. Refer to emergency department if not settling or worsening as may require intravenous (IV) antibiotics.	

Table 1. Differential diagnosis list of acute red eye in children, with key features and management (cont'd). Rows with red shading denote sight-threatening conditions that require urgent referral to ophthalmology for confirmation of diagnosis and management.

Key symptom	Discharge	Key features	Diagnosis	Management	
Pain (cont'd)	Watery	Severe pain; vision loss; intense inflammation of sclera, episclera and conjunctiva; ± bluish scleral hue if thinning; ± history of autoimmune disease	Scleritis	Urgent referral to ophthalmology for confirmation of diagnosis, ocular and systemic workup, systemic immunosuppression or antibiotics depending on the aetiology.	
	Watery	Severe pain; vison loss; nausea and vomiting; headache; cloudy cornea; fixed pupil; high eye pressure	Acute glaucoma	Urgent referral to ophthalmology for confirmation of diagnosis, medical ± laser treatment.	
	Watery	History of inciting event such as chemical/ heat exposure; conjunctival inflammation or pallor in more severe burns; ± corneal epithelial defect; ± corneal opacity	Chemical/ thermal injury	Chemical injury: Immediate irrigation of eye, fornices and eyelids with water, saline or Ringer's lactate solution for at least 30 minutes. Can place topical anaesthetic such as oxybuprocaine 0.4% and an eyelid speculum if available prior to irrigation. Remove any particulate matter; check pH in the inferior fornix 5–10 minutes after irrigation; continue irrigation until pH becomes neutral. Refer urgently to ophthalmology for further management, particularly if red flags are present.	
	Watery	History of inciting event with sharp object or strong blunt force; vision loss; loss of fluid from eye; ± irregular iris; ± hyphaema; ± externalisation of ocular contents	Penetrating eye injury	Protect eye with shield and avoid patching or any pressure on the eye. Administer tetanus toxoid if indicated. Administer analgesia and anti-emetic to prevent Valsalva manoevre and possible expulsion of intraocular contents. Keep nil by mouth but may need IV fluids. IV antibiotics such as cephazolin and gentamicin should be given within six hours of injury. Refer urgently to ophthalmology for further assessment and surgical management.	

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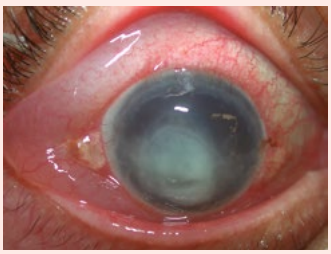
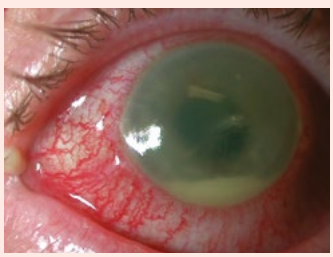
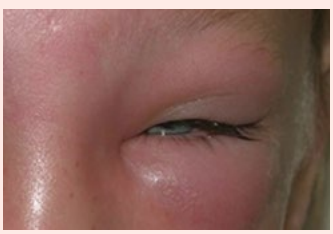
Key symptom	Discharge	Key features	Diagnosis	Management	
Pain (cont'd)	Purulent	Severe pain; vision loss; intense inflammation of conjunctiva; corneal infiltrate with overlying epithelial defect; ± contact lens use	Microbial keratitis	Urgent referral to ophthalmology for confirmation of diagnosis, corneal scraping for microscopy/culture and sensitivity, and intensive antibiotic treatment with close follow-up. Do not commence antibiotics before the corneal scraping. Keep contact lens if possible, for culture.	
	Purulent	History of intraocular surgery or penetrating trauma; severe pain; vision loss; intense inflammation of conjunctiva; hypopyon	Endophthalmitis	Urgent referral to ophthalmology for confirmation of diagnosis. Most common aetiology is acute postoperative endophthalmitis, requiring vitrectomy and intraocular/topical ± systemic antibiotics.	
	Purulent	Diffusely red and swollen eyelid; diffusely red eye, reduced vision; painful eye movements; proptosis; fever; headache	Orbital cellulitis	Urgent referral to emergency department for confirmation of diagnosis and initiation of broad-spectrum IV antibiotics. Computed tomography scan of orbits and sinuses with contrast to confirm diagnosis, identify extent of infection and exclude other causes (eg retained foreign body, cavernous sinus thrombosis). Managed in conjunction with ophthalmology, otorhinolaryngology and infectious diseases ± neurosurgery.	
	Purulent	Inflammation and pain over lacrimal sac area; epiphora; fever	Dacryocystitis	Urgent referral to ophthalmology for confirmation of diagnosis, medical treatment with systemic antibiotics ± surgical drainage. Dacryocystorhinostomy may be required upon resolution of acute infection.