

## Chapter 11 Eye

### Contents

11.1 No content

11.2 No content

[11.3 Anti-infective eye preparations](#)

[11.4 Corticosteroids and other anti-inflammatory preparations](#)







[11.5 Mydriatics and cycloplegics](#)

[11.7 Local anaesthetics](#)

[11.8 Miscellaneous ophthalmic preparations](#)

[For cost information please go to the most recent cost comparison charts](#)

### Key

	<p><b>Red drug</b> see <a href="#">GMMMG RAG list</a></p> <p><i>Click on the symbols to access this list</i></p>
	<p><b>Amber drug</b> see <a href="#">GMMMG RAG list</a></p> <p><i>Click on the symbols to access this list</i></p>
	<p><b>Green drug</b> see <a href="#">GMMMG RAG list</a></p> <p><i>Click on the symbols to access this list</i></p>
	<p>If a medicine is unlicensed this should be highlighted in the template as follows</p> <p style="text-align: center;"><b>Drug name U</b></p>
	<p><b>Not Recommended</b></p>
	<p><b>Over the Counter</b></p>
<b>Order of Drug Choice</b>	<p>Where there is no preferred 1<sup>st</sup> line agent provided, the drug choice appears in alphabetical order.</p>

<b>BNF chapter</b>	<b>11 Eye</b>	
<b>Section</b>	<b>11.3 Anti-infective eye preparations</b>	
<b>Subsection</b>	<b>11.3.1 Antibacterials</b>	
<b>Superficial eye infections</b>		
<b>First choice</b>	<b>Chloramphenicol</b> 0.5% eye drops	Store in the fridge <b>OTC</b>
<b>Alternatives</b>	<b>Chloramphenicol</b> 1% eye ointment	<b>OTC</b>
	<b>Fusidic acid</b> 1% eye drops	
	<b>Ciprofloxacin</b> 0.3% eye drops	
<b>Other antibacterial drops and their uses – <u>Ophthalmic consultants only</u></b>		
<b>Amikacin</b> 2.5% eye drops <b>U</b>	Microbial keratitis – based on culture and sensitivities.	<b>R</b> Preservative free.
<b>Cefuroxime</b> 5% eye drops <b>U</b>	Microbial keratitis. Added to treatment where streptococcal infection likely.	<b>R</b> Store in a freezer prior to use. Once thawed store in a fridge for max 7 days.
<b>Chlorhexidine</b> 0.02% eye drops <b>U</b>	Treatment of acanthamoeba keratitis. Use with propamidine/ dibromopropamidine	<b>R</b>
<b>Dibromopropamidine</b> 0.15% eye ointment	Alternative to propamidine 0.1% drops. Treatment of acanthamoeba keratitis. Use with Polyhexamethylene biguanide (PHMB) or chlorhexidine eye drops.	<b>R</b>
<b>Gentamicin</b> 1.5% eye drops <b>U</b>	Microbial keratitis – based on culture and sensitivities. Can produce toxicity in as little as 48 hours. Use with cefuroxime drops.	<b>R</b>
<b>Levofloxacin</b> 0.5% eye drops		<b>R</b> Also available as preservative free SDU.

		Quinolones must not be used for more than 10 days as resistance rapidly develops.
<b>Ofloxacin</b> 0.3% eye drops	Initial treatment of microbial keratitis.  Short term post-injection prophylaxis	<b>R</b>  Quinolones must not be used for more than 10 days as resistance rapidly develops.
<b>Penicillin</b> 2500 units/ml eye drops <b>U</b>	Microbial keratitis – based on culture and sensitivities.	<b>R</b>  Store in a fridge.
<b>Polyhexamethylene biguanide (PHMB)</b> 0.02% eye drops <b>U</b>	Treatment of acanthamoeba keratitis.  Use with propamidine/ dibromopropamidine eye drops.	<b>R</b>
<b>Propamidine</b> 0.1% eye drops	Treatment of acanthamoeba keratitis.  Use with PHMB or chlorhexidine eye drops.	<b>G<sub>n</sub></b>

### Notes

The availability of unlicensed special order products may vary between secondary care organisations depending on local treatment protocols and pathways.

If you are uncertain about product availability, please contact your local trust pharmacy department or your local CCG Medicines Optimisation team for advice

### For use during cataract surgery

	<b>Cefuroxime</b> 50 mg powder for solution for injection	<b>R</b>
--	--	----------

### Subsection **11.3.2 Antifungals**

### Notes

Antifungal preparations are not commercially available

### Subsection **11.3.3 Antivirals**

<b>First choice</b>	<b>Aciclovir</b> 3% eye ointment	Continue treatment for at least 3 days after complete healing
<b>Alternatives</b>	<b>Ganciclovir</b> 0.15% ophthalmic gel	<b>G<sub>n</sub></b> following specialist initiation

	<b>Trifluorothymidine</b> 1% eye drops <b>U</b>	<b>R</b> Treatment should not generally exceed 21 days Store in the fridge
--	--	--

<b>BNF chapter</b>	<b>11 Eye</b>	
<b>Section</b>	<b>11.4 Corticosteroids and other anti-inflammatory preparations</b>	
<b>Subsection</b>	<b>11.4.1 Corticosteroids</b>	
<b>First choice</b>	<b>Dexamethasone</b> 0.1% eye drops	<b>R</b> , pending SCP Also available as preservative free SDU*
	<b>Prednisolone</b> 0.5% and 1% eye drops	0.5% also available as preservative free SDU*
<b>Alternatives</b>	<b>Fluorometholone</b> 0.1% eye drops	<b>R</b> , pending SCP Fluorometholone is used only occasionally. Its intra-ocular penetration is poor (which probably explains its relative safety). It may be considered useful in a few patients with chronic low grade uveitis where raised intra-ocular pressure (IOP) has been problematic

**Notes**

\* Preservative free eye drops should only be offered when sensitivity to preservatives limits other treatment options. Where patients have sensitivity to preservatives and are using numerous types of drops or when there is a clinical need, they may be prescribed a mixture of some preservative free drops and some preserved drops to limit overall exposure to the preservatives.

[MHRA DSU: Corticosteroids: rare risk of central serous chorioretinopathy with local as well as systemic administration \(August 2017\)](#)

- advise patients to report any blurred vision or other visual disturbances during corticosteroid treatment
- consider referral to an ophthalmologist for evaluation of possible causes if a patient presents with vision problems
- report suspected adverse reactions to us on a Yellow Card

**Intravitreal corticosteroids**

	<b>Dexamethasone</b> 700 microgram intravitreal implant	<b>R</b> <a href="#">NICE TA229: Macular oedema (retinal vein occlusion) - dexamethasone</a> <a href="#">NICE TA349: Dexamethasone intravitreal implant for treating DMO</a>
	<b>Fluocinolone acetonide</b> 190 microgram intravitreal implant	<b>R</b> <a href="#">NICE TA301: Diabetic macular oedema - fluocinolone acetonide intravitreal implant</a>

**Additional guidance**

[GMMMG Macular Drugs Pathways \(November 2017\)](#)

**Corticosteroids combined with antimicrobials**

### Notes

Not recommended except as short term prophylaxis following ocular surgery. Ophthalmic consultant only


<b>Subsection</b>	<b>11.4.2 Other anti-inflammatory preparations</b>	
<b>First choice</b>	<b>Sodium cromoglicate</b> 2% eye drops (13.5ml)	Allergic conjunctivitis <b>OTC</b>
<b>Alternatives</b>	<b>Antazoline 0.5% &amp; Xylometazoline 0.05%</b> eye drops (Otrivine-Antistin®)	Allergic conjunctivitis <b>OTC</b>
	<b>Nedocromil</b> 2% eye drops	
	<b>Olopatadine</b> 1mg/ml eye drops	Seasonal allergic conjunctivitis Max duration of treatment 4 months Olopatadine is known to have both mast cell stabilising and antihistaminic properties.
	<b>Adalimumab (Humira®)</b> 40mg injection	<b>R</b> <a href="#">NICE TA460: Adalimumab and dexamethasone for treating non-infectious uveitis</a>

<b>BNF chapter</b>	<b>11 Eye</b>	
<b>Section</b>	<b>11.5 Mydriatics and Cycloplegics</b>	
<b>Antimuscarinics</b>		
<b>First choice</b>	<b>Atropine</b> 1% eye drops	Atropine 1% also available as preservative free SDU* Duration of action up to 7 days
<b>Alternatives</b>	<b>Cyclopentolate</b> 0.5% eye drops 1% eye drops	Both strengths also available as preservative free SDU* Duration of action 24 hours
<b>Notes</b> * Preservative free eye drops should only be offered when sensitivity to preservatives limits other treatment options. Where patients have sensitivity to preservatives and are using numerous types of drops or when there is a clinical need, they may be prescribed a mixture of some preservative free drops and some preserved drops to limit overall exposure to the preservatives.		


<b>BNF chapter</b>	<b>11 Eye</b>	
<b>Section</b>	<b>11.6 Treatment of Glaucoma</b>	
<a href="#">NICE NG81: Glaucoma: diagnosis and management</a>		
<b>Beta-blockers</b>		
<b>First choice</b>	<b>Timolol</b> 0.25% eye drops 0.5% eye drops 0.1% preservative free SDU eye gel*	Also available as preservative free SDU* There is little to gain through using timolol 0.5% over 0.25%, but may be useful in some patients. Timolol 0.1% eye gel is a once daily application for patients with compliance / administration problems
<b>Alternatives</b>	<b>Levobunolol</b> 0.5% eye drops	Also available as preservative free SDU*
	<b>Timolol long acting gel drops</b> 0.25%, 0.5%	Once daily application for patients with compliance / administration problems
<b>Notes</b>		
* only offer preservative free treatment to people with OHT or suspected COAG if they have concomitant ocular surface disease, signs and symptoms of toxicity or an allergy to preservatives, and are at high risk of conversion to COAG		
<b>Prostaglandin analogues and prostamides</b>		
<b>First choice</b>	<b>Latanoprost</b> 50micrograms/ml eye drops	Also available as preservative free SDU* <a href="#">MHRA DSU: Latanoprost (Xalatan®) – increased reporting of eye irritation since reformulation, July 2015</a>
<b>Alternatives</b>	<b>Bimatoprost</b> 300micrograms/ml eye drops 100micrograms/ml eye drops	300micrograms/ml also available as preservative free SDU*
	<b>Travoprost</b> 40micrograms/ml eye drops	Does not contain benzalkonium chloride as the preservative and therefore may be used in patients where a known allergy to benzalkonium chloride exists



<b>Combination products – prostaglandin analogues with timolol</b>		
<b>First choice</b>	<b>Latanoprost 50 micrograms/ml with Timolol 0.5%</b>	
<b>Alternatives</b>	<b>Bimatoprost 300 micrograms/ml with Timolol 0.5%</b>	Also available as preservative free SDU*
	<b>Travoprost 40 micrograms/ml with Timolol 0.5%</b>	Does not contain benzalkonium chloride as the preservative and therefore may be used in patients where a known allergy to benzalkonium chloride exists
<p><b>Notes</b></p> <p>- Combination products licensed for once daily use where prostaglandin analogue alone is not adequate. Only use where patient has difficulty with compliance / administration</p> <p>* only offer preservative free treatment to people with OHT or suspected COAG if they have concomitant ocular surface disease, signs and symptoms of toxicity or an allergy to preservatives, and are at high risk of conversion to COAG</p>		
<b>Symptomimetics</b>		
<b>First choice</b>	<b>Brimonidine tartrate</b> 0.2% eye drops	
<b>Alternatives</b>	<b>Apraclonidine</b> 0.5% eye drops 1% preservative free SDU eye drops*	<p>Apraclonidine can be used long term for certain complex glaucoma cases where surgery is high risk (Ophthalmic Consultant initiation only - 1% unlicensed use). See also section 11.8.</p> <p>0.5% eye drops for Glaucoma (unlicensed): <b>G<sub>n</sub></b> (following specialist initiation)</p> <p>1% eye drops for Glaucoma (unlicensed): <b>R</b></p>
<b>Combination products – sympathomimetics with timolol</b>		
	<b>Brimonidine tartrate 0.2% with Timolol 0.5%</b>	
<p><b>Notes</b></p> <p>- Combination products are licensed for use when beta-blocker monotherapy does not provide adequate treatment. Only use where patient has difficulty with compliance / administration</p> <p>* only offer preservative free treatment to people with OHT or suspected COAG if they have concomitant ocular surface disease, signs and symptoms of toxicity or an allergy to preservatives, and are at high risk of conversion to COAG</p>		

<b>Carbonic anhydrase inhibitors</b>		
<b>First choice</b>	<b>Brinzolamide</b> 10mg/ml eye drops	Brinzolamide is also licensed for use as an adjunct to prostaglandin analogues.
<b>Alternatives</b>	<b>Dorzolamide</b> 2% eye drops	Also available as preservative free SDU*
<b>Combination products – topical carbonic anhydrase inhibitors with timolol</b>		
	<b>Brinzolamide 10mg with Timolol 5mg/ml</b>	
	<b>Dorzolamide 2% with Timolol 0.5%</b>	Also available as preservative free SDU*
<b>Notes</b>		
<p>- Only use combination products where patient has difficulty with compliance / administration.</p> <p>* only offer preservative free treatment to people with OHT or suspected COAG if they have concomitant ocular surface disease, signs and symptoms of toxicity or an allergy to preservatives, and are at high risk of conversion to COAG</p>		
<b>Combination products – topical carbonic anhydrase inhibitors with sympathomimetic</b>		
	<b>Brinzolamide 10mg/mL with brimonidine tartrate 2mg/mL</b>	<a href="#">NTS recommendation: Brinzolamide 10mg/mL and brimonidine tartrate 2mg/mL eye drops (Simbrinza®) to decrease elevated intraocular pressure (IOP) in adult patients with open-angle glaucoma or ocular hypertension</a>
<b>Carbonic anhydrase inhibitors - systemic drugs</b>		
<b>First choice</b>	<b>Acetazolamide</b> Tablets 250mg Sustained release capsules 250mg	 Ophthalmic consultant initiation only
<b>Miotics</b>		
	<b>Pilocarpine eye drops</b> 0.5%, 1%, 2%, 3%, 4%	2% also available as preservative free SDU*
<b>Notes</b>		
<p>* only offer preservative free treatment to people with OHT or suspected COAG if they have concomitant ocular surface disease, signs and symptoms of toxicity or an allergy to preservatives, and are at high risk of conversion to COAG</p>		

<b>BNF chapter</b>	<b>11 Eye</b>	
<b>Section</b>	<b>11.7 Local anaesthetics</b>	
<b>First choice</b>	<b>Dependent on indication</b>	
<b>Alternatives</b>	<b>Lidocaine 4% and fluorescein 0.25%</b> preservative free SDU eye drops	
	<b>Oxybuprocaine 0.4%</b> preservative free SDU eye drops	Useful for application of diagnostic lenses or suture removal.
	<b>Proxymetacaine 0.5%</b> preservative free SDU eye drops	
	<b>Tetracaine 0.5%, 1%</b> preservative free SDU eye drops	

<b>BNF chapter</b>	<b>11 Eye</b>	
<b>Section</b>	<b>11.8 Miscellaneous ophthalmic preparations</b>	
<b>Subsection</b>	<b>11.8.1 Tear deficiency, ocular lubricants and astringents</b>	
<b>First choice</b>	<p><b>Hypromellose</b> 0.3% eye drops <b>OTC</b> 0.5% eye drops</p>	Also available as preservative free SDU*
<b>Alternatives</b>	<p><b>Carbomers (polyacrylic acid) eye gel</b> <b>OTC</b></p>	Also available as preservative free SDU* Multiple products available – prescribe product with the lowest acquisition cost
	<p><b>Carmellose sodium preservative free SDU eye drops* OTC</b> 0.5%, 1%</p>	
	<p><b>Liquid Paraffin eye ointments*</b> <b>OTC</b></p>	Multiple products available – prescribe product with the lowest acquisition cost Consult the product information for details of expiry once opened
	<p><b>Polyvinyl alcohol eye drops</b> <b>OTC</b></p>	Also available as preservative free SDU* Multiple products available – prescribe product with the lowest acquisition cost
	<p><b>Sodium Hyaluronate eye drops</b> <b>OTC</b> 0.1% eye drops (10mL PF metered dose bottle) 0.15% eye drops (10mL bottle) 0.2% eye drops (10mL PF metered dose bottle) 0.4% PF single dose units</p>	Multiple products available with differing sodium hyaluronate content – consider acquisition cost, patient frequency of instillation, volume per pack and product expiry once opened when prescribing Consult product information for details of expiry once opened 0.15% strength – consider brand with the lowest acquisition cost. Available as PF bottles (10mL) depending on brand
<b>Severe keratitis</b>	<p><b>Ciclosporin eye drops (Ikervis®)</b> 1mg/mL eye drops emulsion Response to treatment should be reassessed at least every 6 months</p>	<p> Following specialist initiation <a href="#">NICE TA369: Ciclosporin for treating dry eye disease that has not improved despite treatment with artificial tears</a></p>
<b>Additional notes</b>		
<p>- In patients who have no identified organic cause for their dry eye condition recommend patient purchases ocular lubricant drops <b>OTC</b></p> <p>* Preservative free eye drops should only be offered when sensitivity to preservatives limits other treatment options. Where patients have sensitivity to preservatives and are using numerous types of drops or when there is a clinical need, they may be prescribed a mixture of some preservative free drops and some preserved drops to limit overall exposure to the preservatives.</p>		

<b>Subsection</b>	<b>11.8.2 Ocular diagnostic and peri-operative preparations and photodynamic treatment</b>	
<b>Ocular diagnostic preparations</b>		
<b>First Choice</b>	<b>Fluorescein</b> sodium preservative free SDU eye drops 1% and 2%	Also available with local anaesthetic (see section 11.7)
<b>Notes</b> - Used in diagnostic procedures and for locating damaged areas of the cornea due to injury or disease.		
<b>Ocular peri-operative drugs</b>		
<b>Alternatives</b>	<b>Apraclonidine</b> 0.5% eye drops 1% preservative free SDU eye drops*	<b>R</b> Apraclonidine 1% is licensed for control or prevention of postoperative elevation of intraocular pressure after anterior segment laser surgery
	<b>Ketorolac trometamol</b> 0.5% eye drops	<b>R</b>
<b>Notes</b> * Preservative free eye drops should only be offered when sensitivity to preservatives limits other treatment options. Where patients have sensitivity to preservatives and are using numerous types of drops or when there is a clinical need, they may be prescribed a mixture of some preservative free drops and some preserved drops to limit overall exposure to the preservatives.		
<b>Subfoveal choroidal neovascularisation</b>		
Ophthalmic consultant only in approved treatment centre		
	<b>Aflibercept</b> ▼ Solution for intravitreal injection, 40 mg/mL, 0.1 mL vial	<b>R</b> <a href="#">NICE TA 294: macular degeneration (wet age-related) - aflibercept</a> <a href="#">NICE TA305: macular oedema (central retinal vein occlusion) – aflibercept</a> <a href="#">NICE TA346: Aflibercept for treating diabetic macular odema</a> <a href="#">TA409: Aflibercept for treating visual impairment caused by macular oedema after branch retinal vein occlusion</a> <a href="#">NICE TA486: Aflibercept for treating choroidal neovascularisation</a>

	<p><b>Ranibizumab</b>▼ solution for intravitreal injection</p> <p>10mg/mL, 0.23mL vial</p> <p>10mg/mL, 0.165mL pre-filled syringe (PFS)</p>	<p><b>R</b></p> <p><a href="#">NICE 155: ranibizumab and pegaptanib for the treatment of age-related macular degeneration</a></p> <p><a href="#">NICE TA274: macular oedema (diabetic) - ranibizumab</a></p> <p><a href="#">NICE TA283: macular oedema (retinal vein occlusion) - ranibizumab</a></p> <p><a href="#">NICE TA298: choroidal neovascularisation (pathological myopia) – ranibizumab</a></p>
<p><b>Additional guidance</b></p> <p><a href="#">GMMMG Macular Drugs Pathways (November 2017)</a></p>		
<p><b>Vitreomacular Traction</b></p>		
<p>Ophthalmic consultant only in approved treatment centre</p>		
	<p><b>Ocriplasmin</b></p> <p>Concentrate for solution for intravitreal injection, 2.5 mg/mL, 0.2-mL vial</p>	<p><b>R</b></p> <p><a href="#">NICE TA297: ocriplasmin for treating vitreomacular traction</a></p>
<b>Subsection</b>	<b>Other eye preparations</b>	
<p><b>Unlicensed eye preparations</b></p>		
	<p><b>Sodium Chloride</b></p> <p>5% eye drops</p>	<p><b>R</b></p> <p>Prescribe as sodium chloride 5% preservative free eye drops 10ml.</p> <p>Used to reduce corneal oedema. Use may be short term following cataract surgery or long term in recurrent corneal erosions.</p>
<p><b>Notes</b></p> <p>The availability of unlicensed special order products may vary between secondary care organisations depending on local treatment protocols and pathways. If you are uncertain about product availability, please contact your local trust pharmacy department or your local CCG Medicines Optimisation team for advice</p>		
<b>Subsection</b>	<b>11.8.2.4 Treatment of burns</b>	
	<p><b>Holoclar®</b></p>	<p><b>R</b></p> <p><a href="#">NICE TA467: Holoclar for treating limbal stem cell deficiency after eye burns</a></p> <p>Approved for treating limbal stem cell deficiency after eye burns in line with NICE and NHS England Commissioning Policy as</p>

---

		of 14 November 2017 (NHSE commissioned)
--	--	---