

# Eye disorders

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For full information on treatment side effects, cautions and contraindications, see electronic British National Formulary ([www.bnf.org](http://www.bnf.org)) or the relevant summary of product characteristics ([www.medicines.org.uk](http://www.medicines.org.uk)).

For information on preparing intravenous medicines for administration, see Medusa Injectable Medicines Guide for the NHS (see Clinical Guidance home page)

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## 1. Ophthalmic products — general advice on use

### Administration of eye drops

- Gently pull down lower eyelid to form a “pocket”
- For eye drops, put one drop ONLY into the pocket then keep eye closed as long as possible after instillation
- For eye ointment, put a small amount into the pocket (blinking will help to spread the ointment around the eye)
- When two or more eye drop preparations are to be administered at the same time allow 5 minutes between each application.

### Considerations for patients with contact lenses

Special care is required when prescribing eye preparations for contact lens users. Some drugs and preservatives in eye preparations can accumulate in hydrogel lenses and may induce toxic reactions. Unless medically indicated, contact lenses should not be worn

during treatment. Alternatively, preservative-free preparations can be used. Ointment preparations and oily eye drops should never be used in conjunction with contact lens wear.

### **Preservatives**

Various preservatives (eg, benzylkonium chloride) and sensitisers are used in eye preparations (see BNF, SPC or individual product entries for details). Single-use preparations (Minims®), are preservative free but expensive and should be reserved for patients with hypersensitivity to preservatives or in patients who are required to continue wearing contact lenses.

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## **2. Ophthalmic inflammation**

Topical corticosteroids are used to suppress postoperative inflammation and for severe inflammatory and allergic ophthalmic disorders.

First choice

**Prednisolone 1% eye drops (Pred Forte®)** Apply 1 drop, to the affected eye(s), two to four times daily.

Second choice (ophthalmology use **ONLY**)

**Prednisolone 0.5% eye drops** Apply 1 drop, to the affected eye(s), every 1 to 2 hours until the inflammation is controlled, then reduce frequency of application.

Or

**Betamethasone 0.1% eye drops** Apply 1 drop, to the affected eye(s), every 1 to 2 hours until the inflammation is controlled, then reduce frequency of application.

For patients who cannot tolerate eye drops with preservatives

**Prednisolone (Minims®) 0.5% eye drops** Apply 1 drop, to the affected eye(s), every 1 to 2 hours until the inflammation is controlled, then reduce frequency of application.

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## **3. Allergic conjunctivitis**

Topical antihistamines (Otrivine-Antistin®) may be used for allergic conjunctivitis. They are less potent than topical corticosteroids and have fewer long term side effects.

Sodium cromoglicate may be useful to treat vernal keratoconjunctivitis.

**Sodium cromoglicate 2% eye drops** Apply 1 drop, to the affected eye(s), four times daily

Or

**Otrivine-Antistin® (antazoline 0.5%, xylometazoline 0.05%) eye drops** Apply 1 drop, to the affected eye(s), two to three times daily;

**NOTE: Otrivine–Antistin® should not be used for patients with angle-closure glaucoma. Concomitant use of monoamine oxidase inhibitors (MAOI's) is also contraindicated (xylometazoline is a sympathomimetic agent).**

## 4. Mydriatics and cycloplegics— use in eye examinations

Antimuscarinics dilate the pupil (mydriasis) and paralyse the ciliary muscle (cycloplegia). They vary in potency and duration of action and are used to aid examinations of the eye. Tropicamide is the least potent, has the shortest duration of action (4 to 6 hours) and is the preferred choice.

**NOTE: Patients should not drive until vision is clear following mydriasis; this is especially pertinent if more than one agent has been used.**

First choice

**Tropicamide 0.5% (Minims® available), 1% (Minims®) eye drops**

Second choice (for ophthalmology use only)

**Cyclopentolate 0.5% (Minims® available), 1% (Minims®) eye drops** (preservative free)  
— lasts for up to 24 hours

Or

**Phenylephrine 2.5% (Minims®), 10% (Minims® available) eye drops** — lasts for up to 7 hours

**NOTE: Concomitant use of monoamine oxidase inhibitors (MAOIs) is contraindicated**

Or

**Atropine 0.5%, 1% (Minims®) eye drops** — lasts for up to 7 days

For locating damaged areas of the cornea

**Fluorescein 1% (Minims®), 2% (Minims®) eye drops**

Local anaesthetics:

- **Proxymetacaine 0.5% (Minims®) eye drops** (preservative free)
- **Proxymetacaine 0.5% and fluorescein 0.25% (Minims®) eye drops** (preservative free)

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## 5. Anterior uveitis

Atropine and cyclopentolate are also used to treat anterior uveitis (inflammation of the iris and anterior chamber) as their cycloplegic action relieves ciliary spasm.

**Atropine 1% (Minims®) eye drops** Apply 1 drop, to the affected eye(s), up to four times daily

Or

**Cyclopentolate 1% (Minims®) eye drops** Apply 1 drop, to the affected eye(s), up to four times daily.

## 6. Glaucoma

First choice – A prostaglandin analogue:

**Latanoprost 0.005% eye drops** Apply 1 drop, to the affected eye(s), once daily in the evening.

Second choice – Switch to the alternative prostaglandin analogue:

**Travoprost 40mcg/ml** Apply 1 drop, to the affected eye(s), once daily in the evening

**NOTE: For patients that have failed on latanoprost or patients that have allergy to benzalkonium chloride (the preservative contained in latanoprost).**

OR

**Timolol 0.25% or 0.5% (both also available as Minims®), eye drops** Apply 1 drop, to the affected eye(s), twice daily.

Or

**Levobunolol 0.5% eye drops** Apply 1 drop, to the affected eye(s), twice daily.

**NOTE: Beta-blocker eye drops are contraindicated for patients with bradycardia, heart block, uncontrolled heart failure, asthma and obstructive airways disease.**

**Also, consider the risk of interaction with systemic drugs (eg, verapamil). Beta blockers are considered the first line eye drops for patients with single eye glaucoma, or for patients that wish to avoid the changes that occur in some patients eyes/eye lashes with prostaglandin analogues.**

Third choice — switch to a combination product

**Latanoprost 0.005%, timolol 0.5% eye drops (first line combination product)** Apply 1 drop, to the affected eye(s), once daily in the morning.

Or

**Duotrav® (travoprost 0.004%, timolol 0.5%) eye drops (alternate combination product)** Apply 1 drop, to the affected eye(s), once daily.

Fourth choice — add to combination product

**Brimonidine 0.2% eye drops** Apply 1 drop, to the affected eye(s), twice daily

Or

**Dorzolamide 2% eye drops** Apply 1 drop, to the affected eye(s), three times daily.

Other treatments

- **Pilocarpine 1%, 2% (also available as Minims®), 4% eye drops** Apply 1 drop, to the affected eye(s), up to four times daily; use the lowest effective strength
- **Acetazolamide 250mg**, orally, four times daily
- **Acetazolamide modified release capsules 250mg to 500mg**, orally, once daily

**NOTE: Acetazolamide is not recommended for prolonged use. If indicated, full blood count and electrolytes should be monitored due to the risk of hypokalaemia and blood disorders including agranulocytosis.**

## 7. Tear deficiency

First choice

**Viscotears® liquid gel** Apply to affected eye(s) three to four times daily when required

Second choice

**Hypromellose 0.3% eye drops** Apply to affected eye(s) when required (may need to be used frequently e.g. hourly)

Preservative free

**Carmellose unit dose eye drops 0.5% or 1%** Apply to affected eye(s) when required

Or

**Viscotears® liquid gel single dose eye drops** Apply to affected eye(s) three to four times daily when required

For use at night or for use regularly when there is a risk of corneal drying or where the eye is not closing properly

**Liquid paraffin (Lacrilube®) eye ointment** Apply to affected eye(s) when required

Third choice

**Ciclosporin 1mg/mL eye drops** in accordance with NICE technology appraisal 369 ([www.nice.org.uk/guidance/ta369](http://www.nice.org.uk/guidance/ta369)) Apply to the affected eye(s) ONCE daily at bedtime, ophthalmologist review at ONE month, GP to review every 6 months

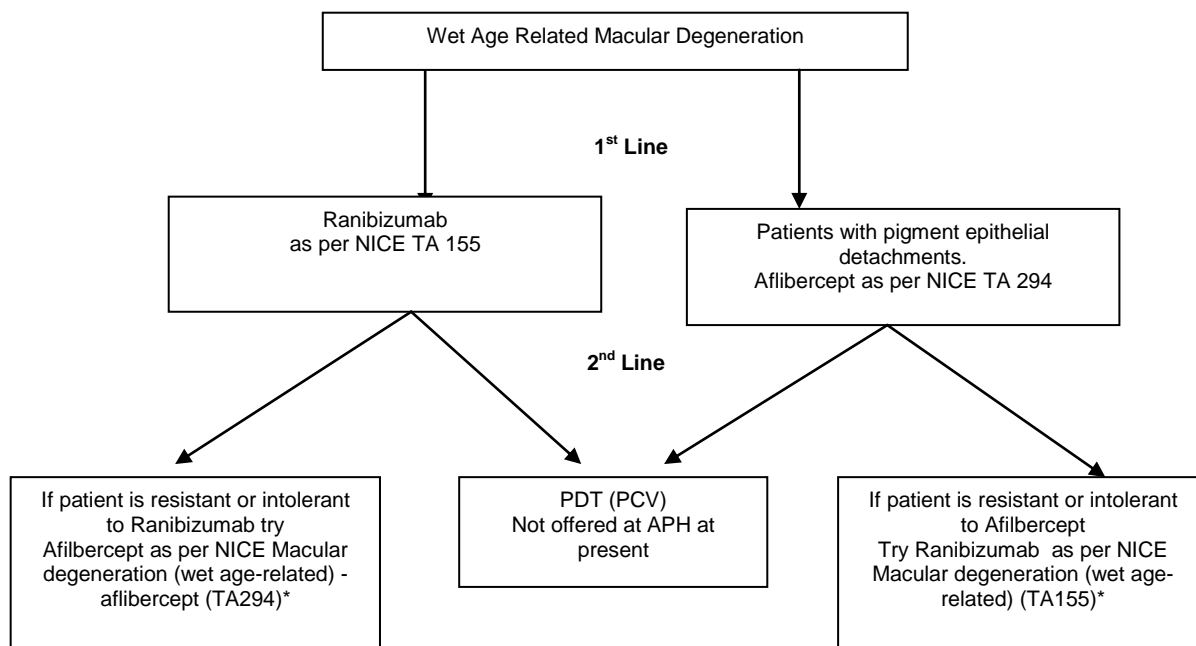
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## 8. Age-related macular degeneration

**Ranibizumab** is available for initiation by consultant ophthalmologists ONLY provided it is prescribed in accordance with NICE technology appraisal 155 (<http://www.nice.org.uk/guidance/ta155>)

**Aflibercept** is available for initiation by consultant ophthalmologists ONLY provided it is prescribed in accordance with NICE technology appraisal 294 ([www.nice.org.uk/ta294](http://www.nice.org.uk/ta294))

## Treatment Outline for Wet Age Related Macular Degeneration



\*The Royal College of Ophthalmologists have produced a statement on the choice of anti VEGF agents for wet AMD treatments:

The use of a second anti-VEGF agent should be considered when:-

- a particular anti-VEGF drug has not shown clinical benefit after optimum treatment;
- where continued use of the initial anti-VEGF agent is unsuitable for example because of an allergic response;
- **and** where there is still potential for improvement in vision with further treatment.

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## 9. Macular oedema

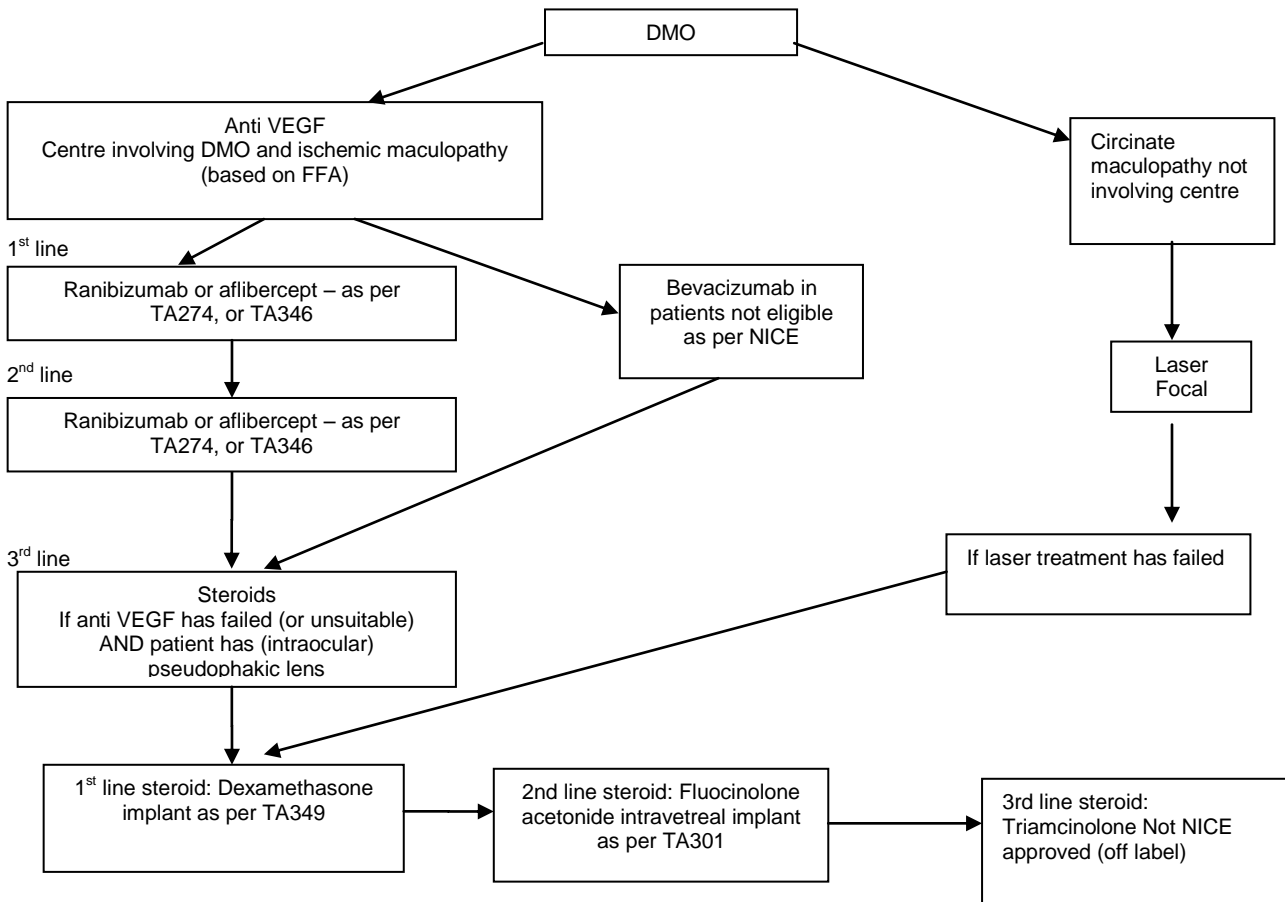
**Ranibizumab** is available for initiation by consultant ophthalmologists ONLY provided it is prescribed in accordance with NICE technology appraisal 274 ([www.nice.org.uk/ta274](http://www.nice.org.uk/ta274)) or TA 283 ([www.nice.org.uk/ta283](http://www.nice.org.uk/ta283))

**Fluocinolone** is available for initiation by consultant ophthalmologists ONLY provided it is prescribed in accordance with NICE technology appraisal 301 ([www.nice.org.uk/ta301](http://www.nice.org.uk/ta301)).

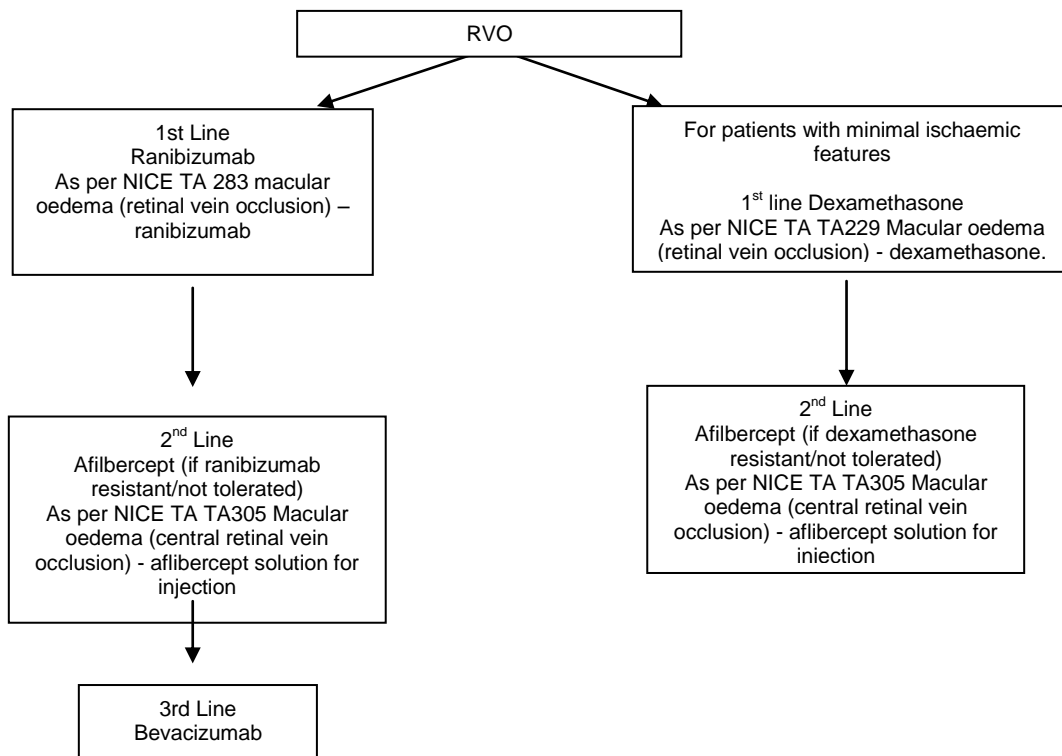
**Aflibercept** is available for initiation by consultant ophthalmologists ONLY provided it is prescribed in accordance with NICE technology appraisal 305 ([www.nice.org.uk/ta305](http://www.nice.org.uk/ta305)) or TA 346 ([www.nice.org.uk/ta346](http://www.nice.org.uk/ta346)).

**Dexamethasone Intravitreal implant** is available for initiation by consultant ophthalmologists ONLY provided it is prescribed in accordance with NICE technology appraisal 229 ([www.nice.org.uk/ta229](http://www.nice.org.uk/ta229)) or TA 349 ([www.nice.org.uk/ta349](http://www.nice.org.uk/ta349)).

Treatment outline for Diabetic Macular Oedema (DMO)



Treatment Outline for Retinal Vein Occlusion (RVO)



## 10. Blepharospasm

This section is under development.

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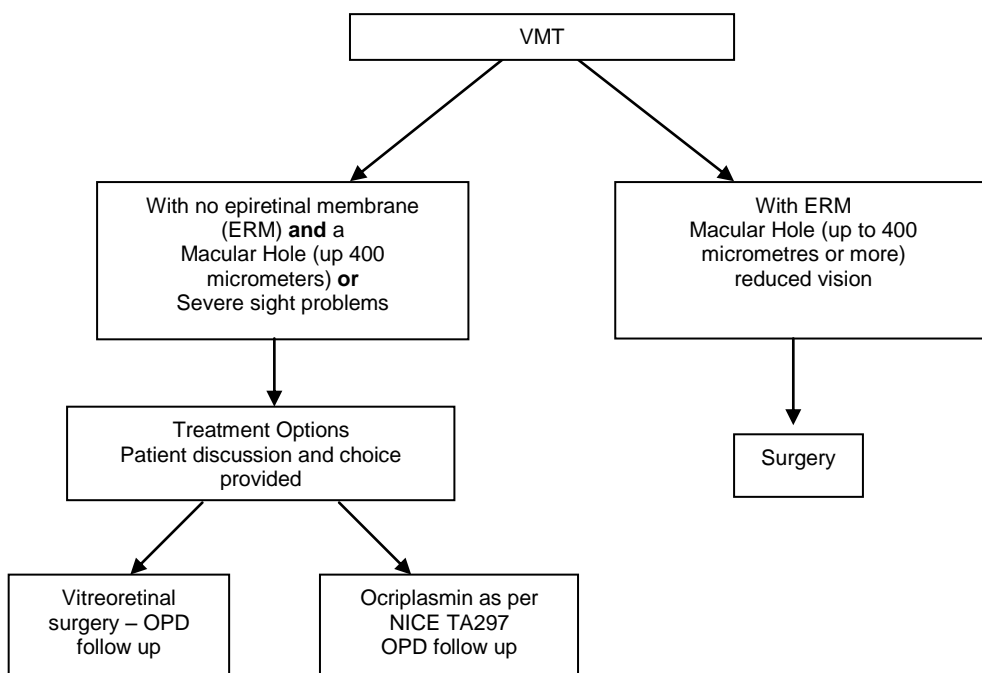
## 11. Vitreomacular traction

**Ocriplasmin** 0.125mg, by intravitreal injection, once as a single dose in patients who have:

- no epiretinal membrane, **and**
- a hole (up to 400 micrometres) in the centre of their retina
- or**
- severe sight problems

**NOTE:** To be initiated by consultant ophthalmologists **ONLY**, as per NICE technology appraisal 297 ([www.nice.org.uk/ta297](http://www.nice.org.uk/ta297)).

Treatment Outline for vitreomacular traction (VMT)

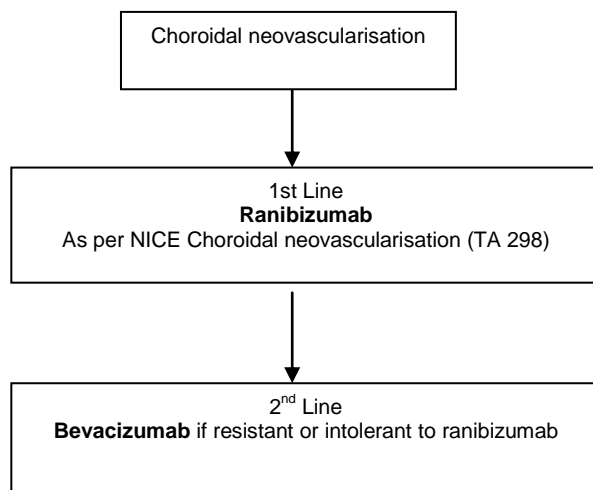




## 12. Choroidal neovascularisation

**Ranibizumab** is available for initiation by consultant ophthalmologists ONLY provided it is prescribed in accordance with NICE technology appraisal 298 ([www.nice.org.uk/ta298](http://www.nice.org.uk/ta298)).

Treatment outline for choroidal neovascularisation associated with pathological myopia



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## 13. Eye infections

For recommendations on the treatment of eye infections please see the [antimicrobial formulary](#)