

# Drugs in Ophthalmology

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- drugs applied topically may be easily absorbed systemically (esp. through cornea).
- eye preparations have warnings **not to use longer than 1 month**; but all preparations contain **bacteriostatic drugs**, so contamination is rare (preparations in practice may be used > 1 month).

## Ointments vs. drops:

- ointments are retained much longer than drops.
- drops need application q 2 h; allow 5 min between drops to avoid overspill.
- ointments are especially useful at night or when eyelid crusting & sticking is problem.

## Drugs that may precipitate GLAUCOMA:

- 1) mydriatics
- 2) steroids
- 3) anticholinergics

## MYDRIATICS

- for *eye examination* use **short acting** mydriatics (repeated in 5-10 min if necessary):  
2.5% **PHENYLEPHRINE**  
0.5-1% **TROPICAMIDE** (lasts 3 hours)
- for **longer action / wider dilation** - 10% **PHENYLEPHRINE** and/or 1% **CYCLOPENTOLATE** (lasts 24 hours).

## Do not dilate pupils of any patient with unexplained visual loss, ptosis, dysmotility until reviewed by senior examiner:

- 1) pupil involvement markedly changes management of **new-onset CN3 palsy**.
- 2) pupil examination - **OBJECTIVE indicator of visual function** (important in suspected functional visual loss).
- 3) **Horner syndrome** is missed easily unless combination of anisocoria that is worse in dark, pupil dilation lag, and ptosis can be correlated.
- 4) pupils are clinically normal in **myasthenia gravis**.

N.B. if **neurologic vital signs** are being monitored (e.g. head trauma, acute CNS disease), pupil dilation should not be used!!!

Do not dilate pupil in any **glaucoma** suspicion! (intraocular pressure and anterior chamber depth should be estimated before dilation).

Contraindication for **PHENYLEPHRINE** – hypertension (esp. if treated with  $\beta$ -blockers).

## CYCLOPLEGICS

**CYCLOPENTOLATE** 1% (lasts 24 hours)  
**ATROPINE** 1% (lasts 7 days)  
**HOMATROPINE** 5%

## MIOTICS

**PILOCARPINE** 1-4%

- used to reverse mydriatics, to treat glaucoma.

## ANESTHETICS

- use for eye examinations, short procedures.
- **do not use for eye pain treatment** – anesthetics abolish corneal reflex →→ corneal damage.  
instead use: eye pads, cold compresses, mydriatics (not in glaucoma!)

## STERIODS

**Potentially dangerous** – risk of:

- 1) dendritic (herpetic) corneal ulcer progression (slit lamp examination is essential before steroid administration!)
- 2) glaucoma

## MAST CELL STABILIZERS

**CROMOLYN** 4%  
**OLOPATADINE** 0.1%  
**LODOXAMIDE** 0.1%

## ANTIHISTAMINES

**AZELASTINE** 0.05%  
**EMEDASTINE** 0.0.5%  
**KETOTIFEN** 0.25%  
**LEVOCABASTINE** 0.05%

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