

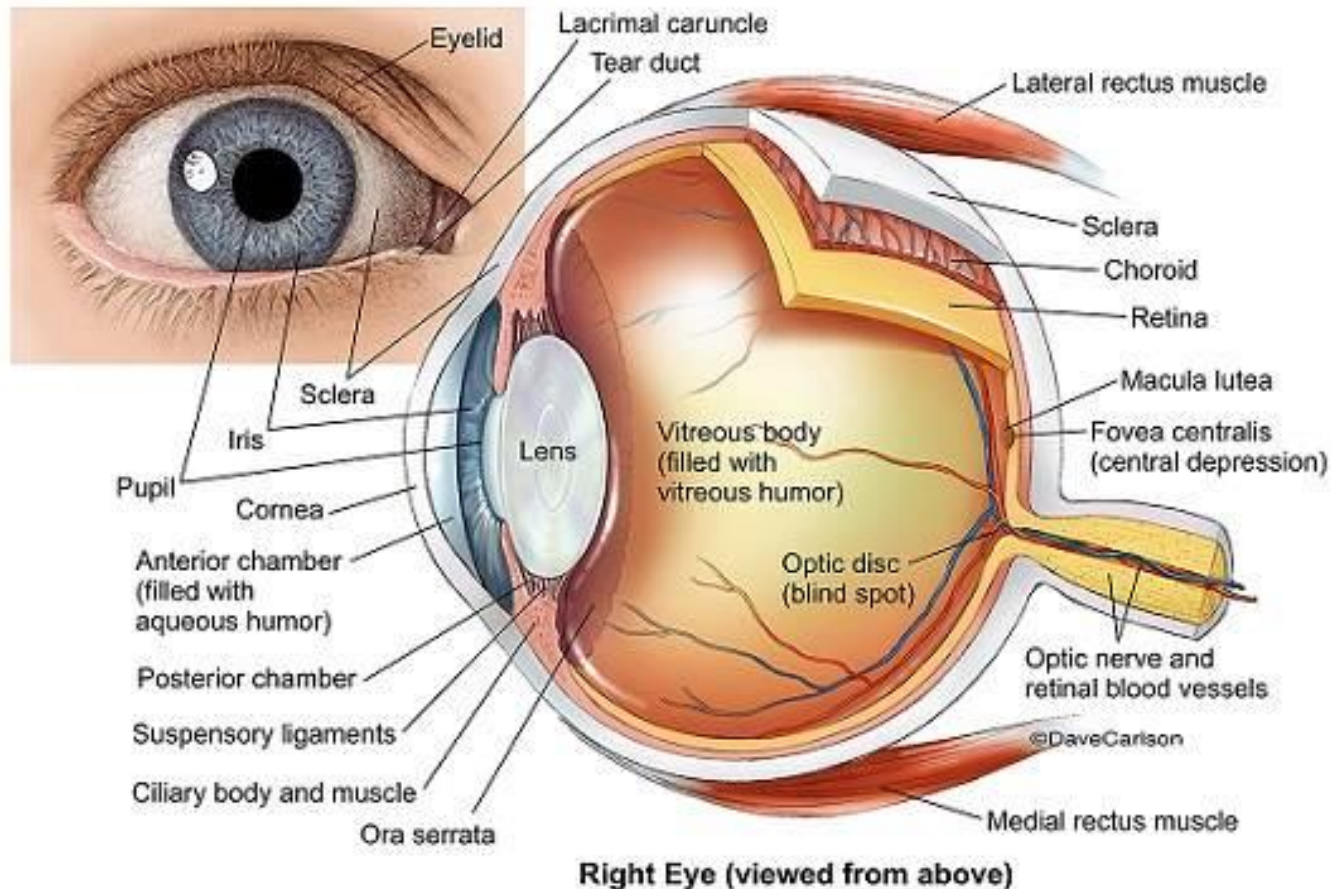
Student Welcome Pack

Ophthalmic Unit

NHS

Lancashire Teaching
Hospitals

NHS Foundation Trust



Welcome to the Ophthalmic Unit

Welcome to Lancashire Teaching Hospitals NHS Foundation Trust and the Ophthalmology Department. We hope that this document will provide you with relevant information to support your induction and orientation to the work place

THE OPHTHALMIC UNIT

**Vanguard Eye
Theatres**
Day surgery

**Eye Assessment Unit
Broughton Suite
Lostock Suite**
Outpatient clinics

Vanguard is open Monday to Friday 7.00 - 19.00

Shift times are: 7.00 – 15.00, 8.30 – 16.30, 10.00 – 18.00, 11.00 – 19.00

Clinics are open 8.00 – 18.00 Monday to Friday

Emergency clinic: 8.30 – 16.30 Saturday

Summary of the Department and Services provided

Broughton Suite (ext. 2285)

The clinic is open Monday to Friday 8.00am – 6.00pm.

The emergency eye clinic is held on Broughton Suite and runs every afternoon and some mornings and Saturdays. Referrals are taken from the Emergency Department, GPs and optometrists.

The nurse-led Telephone Triage service operates on Broughton Suite, taking referrals from professionals as well as existing patients who may be experiencing problems (ext.3510).

Various eye clinics run every day, and include paediatric clinics, diabetes, argon laser procedures, fast track cataract, visual fields, paediatric refraction and nurse-led preoperative assessments.

The Orthoptic department is situated at the end of Broughton Suite.

Eye Assessment Unit – EAU (ext.3501)

The clinic is open Monday to Friday 8.00am – 6.00pm. Clinics operate every day, and include paediatric clinics, diabetes, fast track cataract, glaucoma, oculoplastic, YAG laser procedures, Low Visual Aid (LVA), paediatric LVA and nurse-led preoperative assessments.

There is a photography room on EAU (room 2) which is used by the Ophthalmic photographers and houses an optical coherence tomography camera (OCT) and fundus camera. The fundus fluorescein angiography clinic runs from here on Wednesday and Friday mornings.

An Eye Clinic Liaison Officer (ECLO) from RNIB/Galloways charity is usually in attendance in the eye clinics on Mondays, Tuesdays and Wednesdays. They will collect referrals, complete the paperwork for Certificates of Vision Impairment, speak to patients, provide support and organise ongoing support for people with visual problems

Lostock Suite

The clinic is open 8.00am – 6.00pm.

Preoperative assessment clinics are held on Lostock Suite for patients who need eye surgery.

Patients who require 'phasing' (checking of intraocular pressure through the day) will spend the day on Lostock Suite; this is a nurse-led service.

All glaucoma clinics are held on Lostock Suite, as well as some neuro-ophthalmic eye clinics.

An outreach Ocular Prosthetic clinic is held on Mondays by Stuart, who is an Ocular Prosthetist in the National Artificial Eye Service which is based in Blackpool.

Vanguard Eye Theatres (ext.2286)

The 2 Vanguard Eye Theatres are located on Rosemere car park at Royal Preston Hospital; they are open 7.00am – 7.00pm. Theatre sessions run Monday to Friday, every morning and afternoon.

A range of ophthalmic operations are undertaken such as; cataract extraction, glaucoma surgery, squint correction, oculoplastic procedures, corneal grafts, corneal surgery, vitreoretinal surgery and intravitreal injections.

Orthoptic Department

The Department is located at the end of Broughton Suite. Orthoptists run clinics for patients referred with ocular motility problems, squint and amblyopia. They see children and adults and hold many clinics in the community as well as at Royal Preston and Chorley Hospitals.

Medical Photography

The Department is located in the Day Treatment Centre near Charters Restaurant.

Learning opportunities on the Ophthalmic Unit

- **Preoperative assessments for ophthalmic surgery**
- **Observe eye operations in the Day Case Unit theatre (SPOKE)**
- **Get involved with the fundus fluorescein angiogram clinic (FFA clinic)**
- **Spend time in the eye emergency clinic**
- **Observe doctors in clinic and procedures such as tear duct washouts**
- **Admit and discharge patients for ophthalmic day surgery**
- **Eye medication administration**
- **Spend time with the Artificial Eye Service practitioner (SPOKE)**
- **Observe the different tests that are conducted in eye clinic and find out their purpose**
- **Find out about the role of the Eye Clinic Liaison Officer (ECLO)**
- **Spend time observing the role of the Orthoptist (SPOKE)**
- **Sit in in the Low visual aid clinic (SPOKE)**
- **Discover the role that Medical Illustration plays in ophthalmology (SPOKE)**
- **Observe intravitreal injection procedure**
- **Eye laser clinics**
- **Ophthalmic telephone triage**
- **Visit Galloways – a local charity for people with sight problems (SPOKE)**

Things to do on placement

- ✓ Get a copy of the Unit's Anatomy and Physiology Workbook to complete to help your understanding of the speciality of ophthalmology
- ✓ Find out what the different types of laser eye treatment called and what conditions do they treat?
- ✓ Observe the process of consent, read Trust policy, look at the different consent forms used in the Unit
- ✓ Have a look at the information in the Learning Disability (LD) folder or on the intranet and speak to the Unit's LD champions – adults with LDs are 10 times more likely to be blind or partially sighted than the general population, we strive to ensure that our patients who have a LD get the best care possible and try to ensure that they have a positive experience, whether it is on clinic or if they need eye surgery
- ✓ Speak to the Eye Clinic Liaison Officer and find out how to guide and offer help to a person with sight problems. Try on some 'sim specs' to see how different eye conditions affect vision
- ✓ Observe the process of completing a Certificate of Vision Impairment (CVI)

Some equipment you will see on the Ophthalmic Unit

Slit lamp microscope for eye examination



Goldmann
tonometer for
checking IOP on
the slit lamp



Tonopen



Hand-held instruments
for measuring the
pressure in the eye
(intraocular pressure or
IOP)

Icare instruments



Lens meter to measure glasses



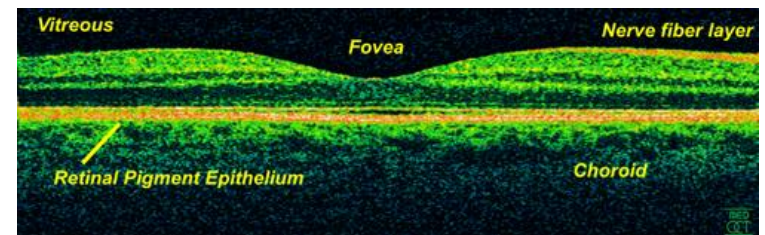
Visual field testing



Optical Coherence Tomography

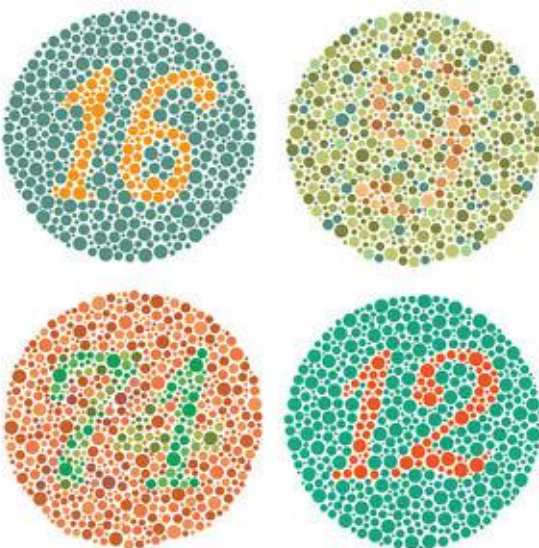


Cross section image of retina



Biometry machine for measuring eyes before cataract surgery

Charts for testing colour vision



Ophthalmoscope for examining the retina

OD right				OS left			
AL: 24.18 mm (SNR = 4.3) K1: 41.67 D / 8.10 mm @ 92° K2: 42.19 D / 8.00 mm @ 2° R / SE: 8.65 mm / 41.59 dpt Cyl: -0.52 D @ 92°				AL: 24.21 mm (SNR = 183.0) K1: 41.21 D / 8.19 mm @ 105° K2: 41.98 D / 8.04 mm @ 15° R / SE: 8.11 mm / 41.59 dpt Cyl: -0.77 D @ 105°			
Eye Status: phakic				Refraction: -0.50 D +1.75 D x 175° Eye Status: Pseudophakic Acrylate			
AMO Tecnis ZCB00		Alcon SA60AT		AMO Tecnis ZCB00		Alcon SA60AT	
SF:	2.03	SF:	1.65	SF:	2.03	SF:	1.65
IOL (D)	REF (D)	IOL (D)	REF (D)	IOL (D)	REF (D)	IOL (D)	REF (D)
23.0	+1.66	22.0	-0.89	23.5	-1.20	22.5	-1.04
22.5	-0.71	21.5	-0.54	23.0	-0.85	22.0	-0.68
22.0	-0.37	21.0	-0.19	22.5	-0.50	21.5	-0.33
21.5	-0.03	20.5	0.16	22.0	-0.16	21.0	0.02
21.0	0.30	20.0	0.50	21.5	0.18	20.5	0.37
20.5	0.63	19.5	0.84	21.0	0.51	20.0	0.71
20.0	0.96	19.0	1.17	20.5	0.84	19.5	1.05
Emme - IOL: 21.45	Emme - IOL: 20.73	Emme - IOL: 21.77	Emme - IOL: 21.03				
Alcon AcrySof MA60AC		Alcon SN6CWS		Alcon AcrySof MA60AC		Alcon SN6CWS	
SF:	1.9	SF:	1.84	SF:	1.9	SF:	1.84
IOL (D)	REF (D)	IOL (D)	REF (D)	IOL (D)	REF (D)	IOL (D)	REF (D)
22.5	-0.90	22.5	-0.98	23.0	-1.03	23.0	-1.12
22.0	-0.55	22.0	-0.63	22.5	-0.68	22.5	-0.77
21.5	-0.20	21.5	-0.28	22.0	-0.34	22.0	-0.42
21.0	0.14	21.0	0.04	21.5	0.01	21.5	-0.07
20.5	0.47	20.5	0.40	21.0	0.35	21.0	0.27
20.0	0.80	20.0	0.73	20.5	0.68	20.5	0.61
19.5	1.13	19.5	1.06	20.0	1.01	20.0	0.94
Emme - IOL: 21.20	Emme - IOL: 21.09	Emme - IOL: 21.51	Emme - IOL: 21.39				

Testing visual acuity

All our patients have their visual acuity checked, it is a vital part of ophthalmic assessment



Snellen chart



Occluder to test each eye separately



LogMAR chart

Testing visual acuity (VA) procedure

1. SNELLEN CHART TEST – tests central distance vision

- The patient needs to be 6 metres distance from the chart – more usually 3 metres with the chart viewed in a mirror
- The patient should wear their distance glasses if they have any
- Using the occluder, test each eye separately, usually right eye is tested first, then left eye
- Ask the patient to read the letters on the chart as far as they are able
- The VA is recorded as a fraction e.g. 6/5 meaning they could see letters at 6 m, and reached the line labelled '5'
- Use the pinhole (PH) flap on the occluder if VA is 6/9 or less – the pinhole allows only the central rays of light to fall on the macula and can improve VA, PH measurement is also documented
- If the patient is unable to see letters at 6 m, use chart at 3 m, 2 m, 1 m
- If unable to see chart at 1 m, then test if they can count fingers (CF) or see hand movements (HM) or testing with a pen torch perceive light (PL)

Testing visual acuity (VA) procedure

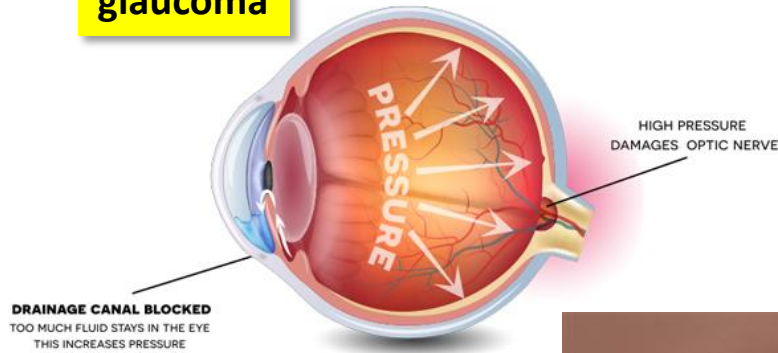
2. LogMAR CHART TEST – tests central distance vision

- The patient needs to be 2 metres distance from the chart
- The patient should wear their distance glasses if they have any
- Using the occluder, test each eye separately, usually right eye is tested first, then left eye
- Ask the patient to read the letters on the chart as far as they are able
- On the result sheet, mark off all the letters that the patient gets correct
- Use the pinhole (PH) flap on the occluder if the patient misses any letters
- If the patient can only see 4 letters or less at 2 m, move the chart to 1m
- If unable to see 1 m chart, test count fingers (CF), hand movements (HM) or perceive light (PL) testing with a pen torch if needed

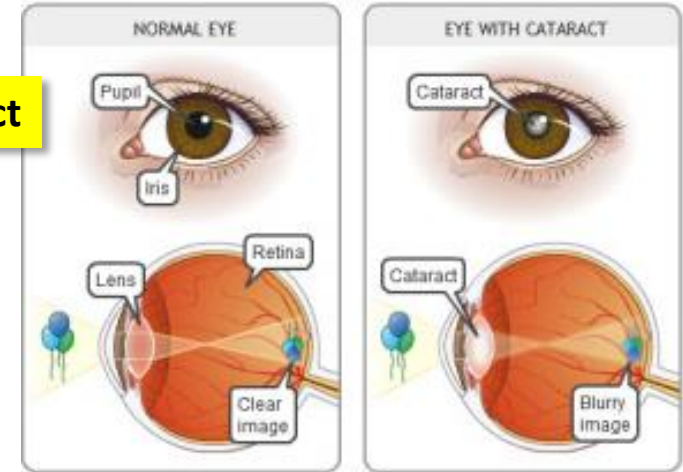
On placement, you will receive full training and have supervised practice in testing VA, you may be able to complete the clinical competency depending on the length of your placement

Some common eye problems that we treat

glaucoma



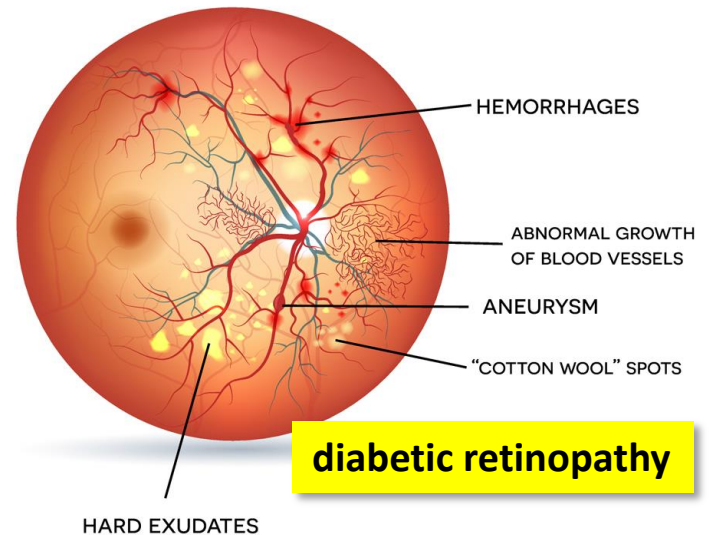
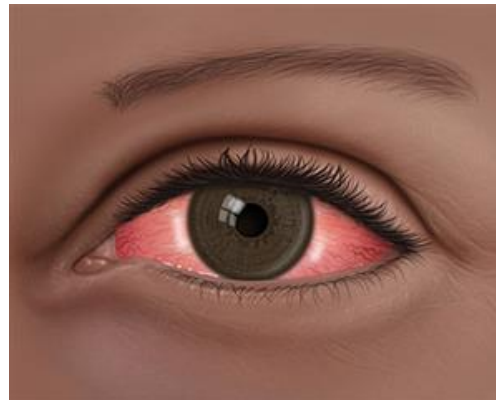
cataract



corneal ulcer



conjunctivitis

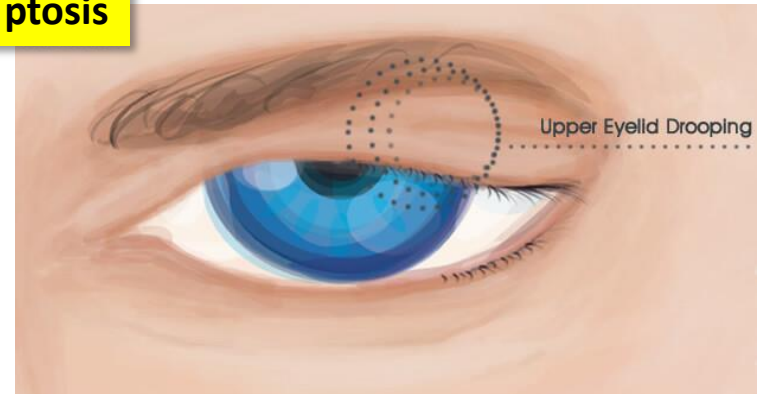


diabetic retinopathy

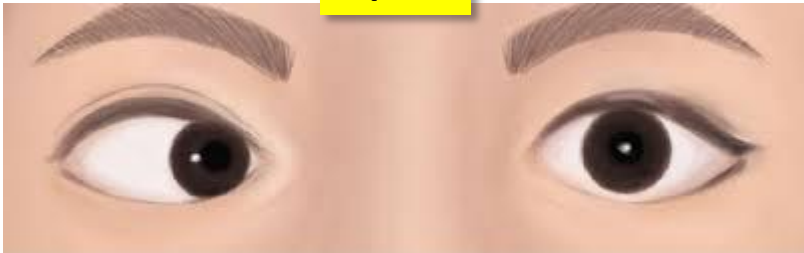
foreign body



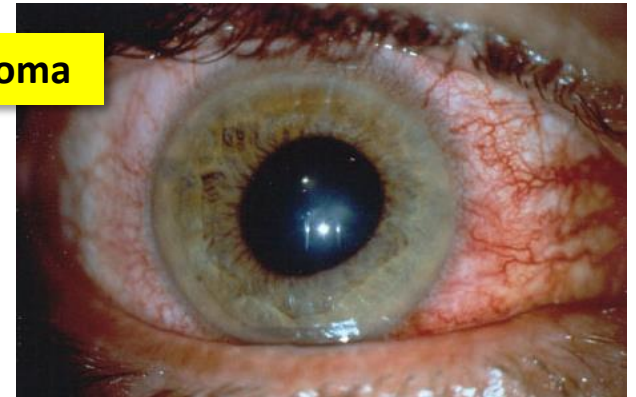
ptosis



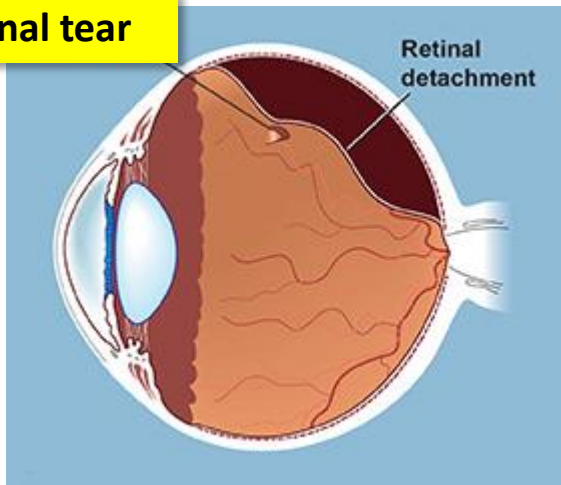
squint



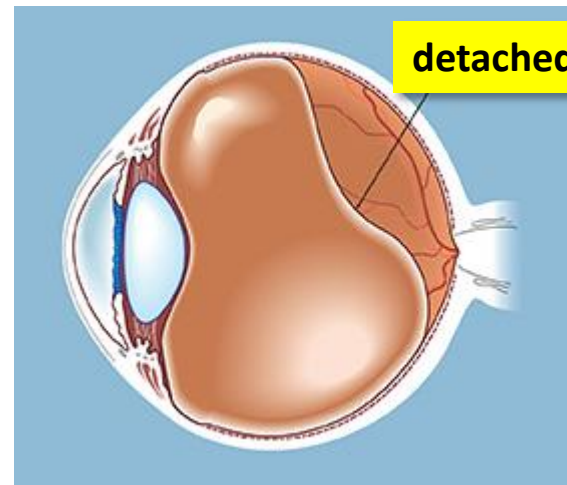
acute glaucoma



retinal tear

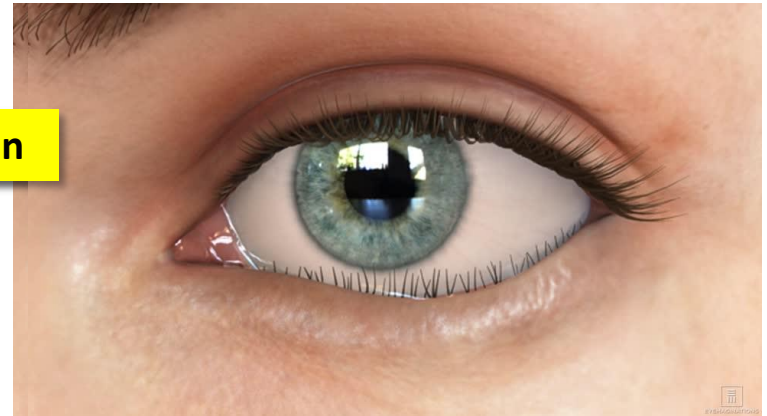


detached vitreous





ectropion



entropion



orbital cellulitis



blepharitis



chalazion

Ophthalmic surgery

Eye surgery takes place in the Vanguard Eye Theatres and Day Case Unit

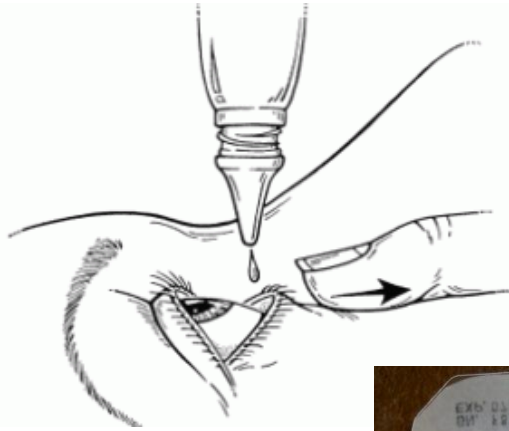
- **Cataract surgery**
- **Glaucoma surgery – trabeculectomy, viscocanalostomy, stent insertion**
- **Squint correction**
- **Oculoplastic surgery – ptosis, entropion and ectropion repair**
- **Corneal graft**
- **Dacryocystorhinostomy (DCR)**
- **Vitreo-retinal surgery**

You will have the opportunity to spend some time observing different types of eye surgery.



It's a good idea to follow a patient journey from clinic to preoperative assessment to admission to surgery to discharge

Common eye drops used on the Ophthalmic Unit



- **Tropicamide** – dilates the pupil for examination of the eye/treatment/surgery
- **Phenylephrine** – dilates the pupil for examination of the eye/treatment/surgery
- **Pilocarpine** – constricts the pupil for treatment
- **Oxybuprocaine** – anaesthetic
- **Tetracaine** – anaesthetic
- **Chloramphenicol** – antibiotic
- **Prednisolone** – steroid
- **Maxitrol** – combined antibiotic and steroid
- **Povidone iodine** – antiseptic prior to surgery or injection
- **Fluorescein** – dye to enable pressure checks and check the cornea
- **Mydriaser** – pellet to dilate the pupil for cataract surgery

Nurses working on the Ophthalmic Unit administer most eye drops under **Patient Group Directions**; students can only administer eye drops that have been prescribed by a doctor

General principles for administering eye drops

- Generally, drops are instilled into the lower conjunctival sac, i.e. the lower eyelid
- Undertake hand hygiene
- Ask the patient to tilt their head backwards and to look up towards the top of their head
- Warn that the drop may sting
- Gently pull down the lower eyelid with a clean tissue
- Take care not to touch the end of the bottle onto the eye
- Instil the drop into the pocket of the lower conjunctival sac – normally 1 drop is sufficient as the sac cannot hold anymore volume than 1 drop
- Ask patient to close their eyes gently to maximise medication contact with the eye and minimise systemic absorption via the nasal mucosa
- If another eye medication is required, wait at least 3 minutes before administering in order to allow absorption of the first drop
- Give the patient a tissue so they may dab their cheek if any drop overflows



EYE OINTMENT

- Always apply ointment after drops
- Squeeze 5 mm of ointment along the lower conjunctival sac from nose outwards
- Ointment may cause temporary blurring of vision due to its greasy consistency



LEARNING POINTS

- Find out what 'punctal occlusion' means in relation to administering eye medication
- What are the correct storage conditions for eye medication?
- What are Minims?

Glossary of terms relating to the eye

Amsler grid	A chart for monitoring central vision, especially by a patient at home
Aphakia	Absence of the crystalline lens
Argon laser	Laser that uses photocoagulation
Astigmatism	Uneven curvature of the cornea
Biometry	Measurement of the eye
Blepharitis	Inflammation of the eyelid margins
Cataract	Opacity of the crystalline lens
Diopetre	Unit of measurement of strength of the refractive power of the eye or lenses
Diplopia	Double vision
Ectropian	Turning out of the eyelid
Endophthalmitis	Inflammation/infection of the inner structures of the eye
Entropian	Turning inwards of the lid margin
Enucleation	Removal of the eyeball and length of optic nerve
Epiphora	Watering eye
Field of vision	The entire area that can be seen without moving the eye
Fundus	Posterior aspect of the retina including the optic disc and the macula
Glaucoma	A group of conditions characterised by an elevated intraocular pressure, optic disc changes and visual field loss
Guttae (G.)	Eye drops
Hypermetropia	Long sight
IOL	Intra ocular lens

IOP	Intra ocular pressure
Iridotomy	A hole in the iris, usually performed by a laser beam
Iritis	Inflammation of the iris
Ishihara	Chart for testing colour vision
Keratitis	Inflammation of the cornea
Miotic	A drug that constricts the pupil
Mydriatic	Drug that dilates the pupil
Myopia	Short sight
Occulentum (Oc.)	Eye ointment
Pachymetry	A technique to measure the corneal thickness using a pachymeter
PGD	Patient group direction
Phacoemulsification	Removal of cataract by ultrasound, breaking down lens matter prior to aspiration
Photophobia	Sensitivity to light
Pseudophakia	Presence of an artificial intra ocular lens implant following cataract extraction
Ptosis	Drooping eyelid
Refraction	(a)Bending of light rays; (b)measurement of and correction of refractive errors of the eye
Retinopathy	Non-inflammatory disease of the retina
Strabismus	Squint (misalignment of the eyes)
Tonometer	Instrument for measuring intraocular pressure
Topography	A contour map of the curvature of the cornea