

# EYE DISORDERS



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## GUIDELINES

# EYE ANATOMY

Please watch this video before listening to the audio session.

Anatomy of the Eye :

[https://www.osmosis.org/learn/Anatomy\\_and\\_physiology\\_of\\_the\\_eye](https://www.osmosis.org/learn/Anatomy_and_physiology_of_the_eye)

## HISTORY TAKING AND PHYSICAL EXAMINATION

<https://geekymedics.com/eye-examination-osce-guide/>

### REASON FOR VISIT/PRESENTING COMPLAINT

Ask the main reason why the patient has come to seek an eye examination.

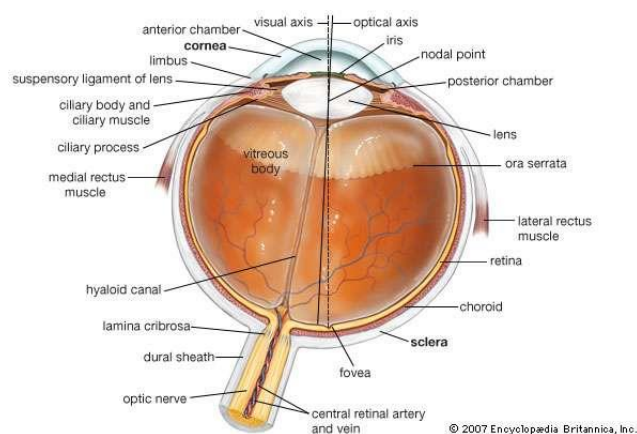
Record the main presenting symptoms in the patient's own words and in a chronological order. The four main groups of symptoms are:

1. Red, sore, painful eye or eyes (including injury to the eye)
2. Decreased distance vision in one or both eyes, whether suddenly or gradually
3. A reduced ability to read small print or see near objects after the age of 40 years
4. Any other specific eye symptom, such as double vision, swelling of an eyelid, watering or squint.

### HISTORY OF PRESENTING COMPLAINT

This is an elaboration of the presenting complaint and provides more detail. The patient should be encouraged to explain their complaint in detail and the person taking history should be a patient listener. While taking a history of the presenting complaint, it is important to have potential diagnoses in mind. For each complaint, ask about:

- Onset (sudden or gradual)
- Course (how it has progressed)
- Duration (how long)
- Severity
- Location (involving one or both eyes)
- Any relevant associated symptoms
- Any similar problems in the past
- Previous medical advice and any current medication.



## PAST EYE HISTORY

Ask for detail about any previous eye problems

- History of similar eye complaints in the past. This is important in recurrent conditions such as herpes simplex keratitis, allergic conjunctivitis, uveitis and recurrent corneal erosions
- History of similar complaints in the other eye is important in bilateral conditions such as uveitis, cataract
- History of past trauma to the eye may explain occurrence of conditions such as cataract and retinal detachment
- History of eye surgery. It is important to ask about any ocular surgery in the past such as cataract extraction, muscle surgery, glaucoma, or retinal surgery
- Other symptoms. Ask whether the patient has any other specific eye symptoms.

## PAST MEDICAL HISTORY

Ask about any current and past medical conditions. These include conditions such as diabetes – macular degeneration, hypertension- glaucoma, arthritis, HIV, asthma , multiple sclerosis – loss of red vision and eczema possibly causing dry eyes. Currently treated and past medical conditions, illnesses, injuries, and surgeries should be recorded. You should record the year of onset or occurrence of older incidents, and the month and year of more recent entries. Ask specifically about eye surgeries such as cataract surgery, refractive surgery, muscle surgery, or retina surgery or treatment.

As far as the eyes are concerned, high blood pressure and diabetes are of particular importance. Patient's don't always volunteer this information. You can use the patient's medication list as a clue to their health problems. Although not always the case, it is a pretty good bet that a patient on a blood pressure medication has had high blood pressure.

## FAMILY EYE HISTORY

It is important to ask the patient whether any other member of the family has a similar condition or another eye disease. This can help to establish familial predisposition of inheritable ocular disorders like glaucoma, retinoblastoma or congenital eye diseases, diabetes and hypertension. Especially check if family members with cataracts at a young age.



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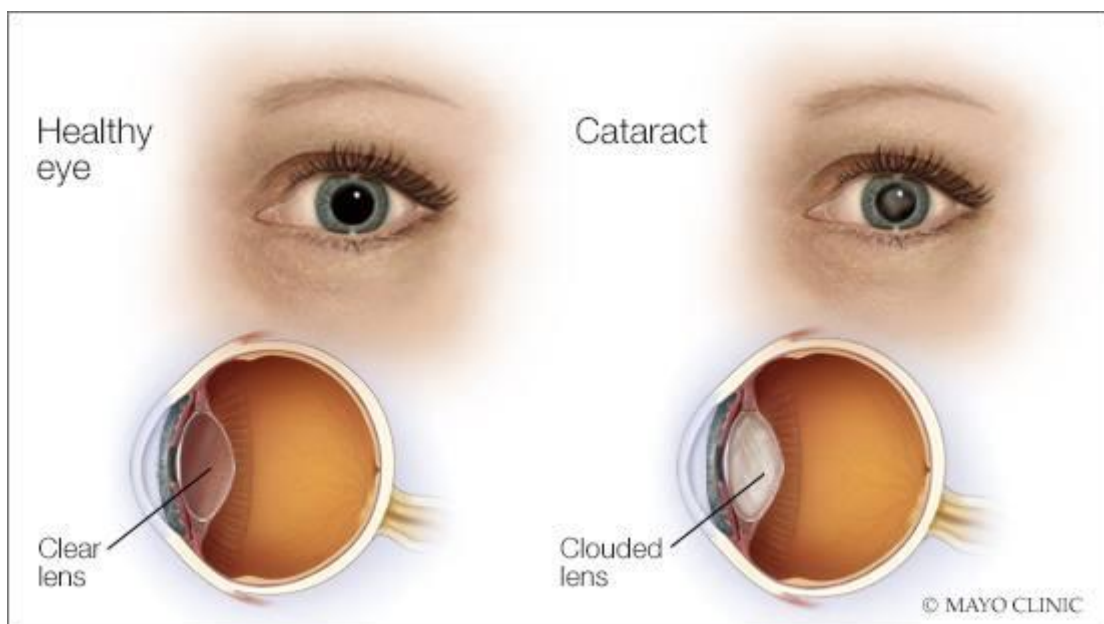
## MEDICAL HISTORY

Ask about present and past medications for both ocular and medical conditions. Don't overlook any medications that the patient may have stopped taking some time ago. It is also helpful to ask whether the patient has been able to use the medication as prescribed (their compliance). If a medication is ineffective, you want to know whether the patient is actually using the medication as prescribed, for example glaucoma medications. Using your own discretion, it is helpful to find out whether access to medication prescribed is a problem. This helps to ascertain whether cost or other concerns are a potential reason for non-compliance. There could also be practical issues, such as difficulty instilling eyedrops or forgetting to do so.

Do not forget to ask in a non-judgmental way about traditional/herbal medication use.

Don't forget about over-the-counter medications and vitamins.

It is a good idea to record eye medications separately from other medications, so that they don't get lost in the shuffle. You need to record the strength, the dose schedule, and the last time that a glaucoma medication was used.



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## SOCIAL HISTORY

- The patient's occupation and hobbies are important with respect to their visual requirements
- Do they smoke. Consider associated symptoms such as hypertension.
- Alcohol history – consider thiamine deficiency affecting vision especially if pt has double vision
- Travel history. Consider parasite infections like bilharzia from rivers causing blindness
- Sexual history when considering Reiters caused by Chlamydia.

## OPHTHALMOLOGY

**PC**  
EYE PAIN

**PMH**  
Past medical history should include the usual health questions, but with the main emphasis on conditions directly contributing to ocular pathology such as diabetes, hypertension, and coronary artery disease. Also, ask about thyroid problems and asthma (you might need to prescribe a beta-blocker and you don't want to set off bronchospasm)

### **Past Ocular History**

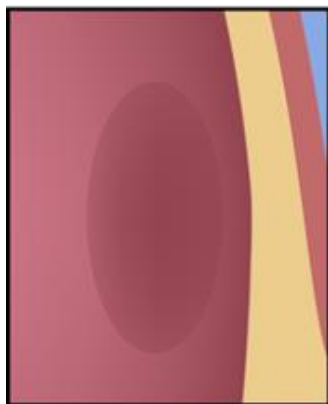
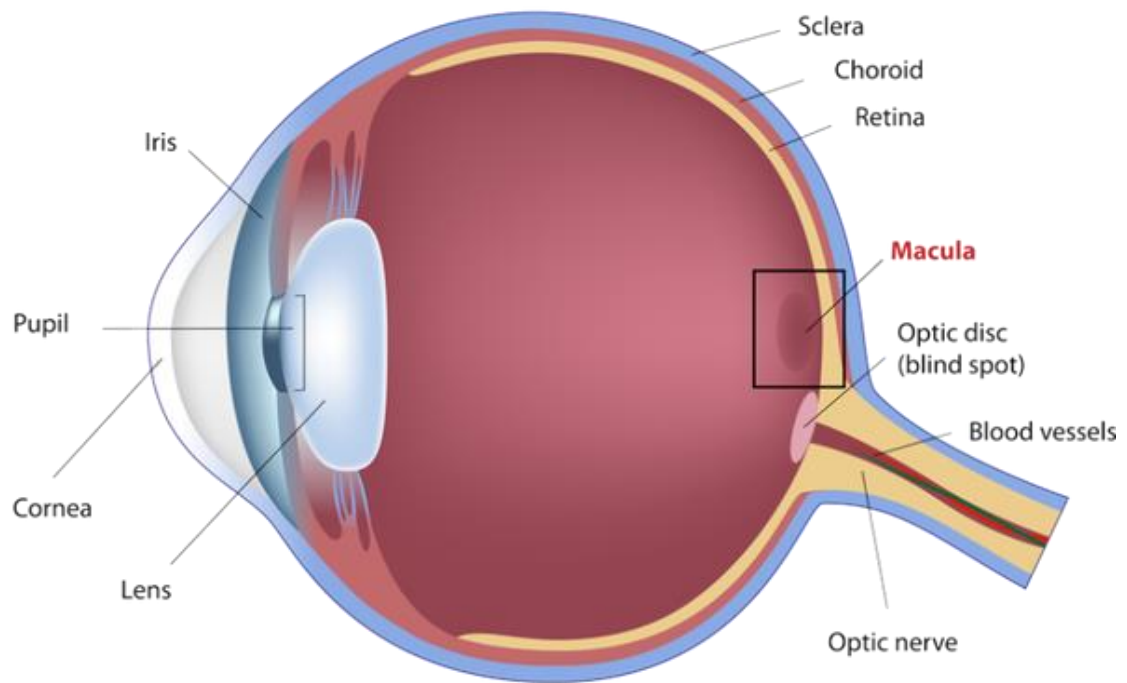
Ocular history should inquire about past clinic visits and surgeries. Specifically, cataract surgeries, eye trauma, and glaucoma. You can often piece together your patient's ocular history by examining their eyedrops.

## MEDICATIONS

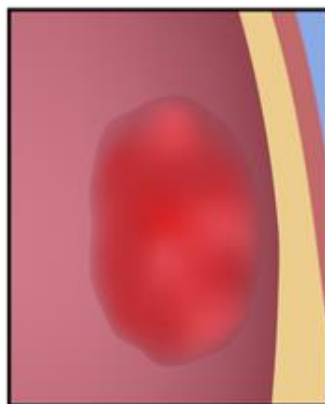
Find out what eyedrops your patient is taking, and why. Are they using a regular eyedrop? How about vasoconstricting Visine? Did they bring their drops with them? If your patient can't remember their medications, it often helps to ask about the bottlecap-color of their drops (ex. all dilating drops have red caps). Also, it's nice to know if your patient is taking an oral beta-blocker already, in case you want to start a beta-blocking eyedrop.



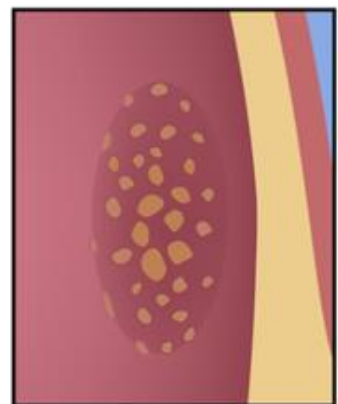
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Normal



"Wet" Macular Degeneration



"Dry" Macular Degeneration

## ALLERGIES

List basic allergies and their reaction. We sometimes give Diamox to control eye pressure so make sure your glaucoma patient isn't allergic to sulfa drugs



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## FAMILY HISTORY

Focus on history of glaucoma and blindness. Patients will often confuse glaucoma with cataracts, so be sure to clarify the difference.

## SOCIAL HISTORY

Check for specific detail related to eye conditions such as driving, work etc

## SYSTEMIC ENQUIRY

- 1. Floaters and flashing lights:** These are the classic symptoms of a retinal detachment and retinal tears so ask EVERY patient about these symptoms. Most patients complain of some floaters – see if they're actually new or have worsened recently.
- 2. Transient vision loss:** Think of migraine vessel spasm in the young and micro-emboli in the elderly. Curtains of darkness might indicate an ischemic event or a retinal detachment, so explore these symptoms in detail.
- 3. Blurry vision:** Is the vision always blurry? Does it worsen when reading or watching TV (people blink less when watching TV and develop dry eyes). Is this a glare problem at night that might indicate cataracts?  
Does the diabetic patient have poor control and hyperglycemic swelling of the lens?
- 4. Red, painful eyes:** A common complaint. Be sure to ask about the nature of the pain (is this a scratchy pain, aching pain, or only pain with bright light). Is there discharge that might indicate an infection?
- 5. Chronic itching and tearing:** Think about allergies or blepharitis. Is it in both eyes?
- 6. Headaches and scalp tenderness:** Think of temporal (giant cell) arteritis and ask about other collaborating symptoms like jaw claudication, polymyalgias, weight loss, and night sweats.



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## EXAMINATION

Vision, pupil, and pressure are the “vital signs” of ophthalmology. After a brief history, I check these measurements before dilating the eyes.

This is because dilating drops will effect vision, pupil size, and potentially elevate our pressure measurements so you need to check these signs first. If you ever consult ophthalmology, we will always ask you ... WHAT'S THE VISION, PUPIL, AND PRESSURE?

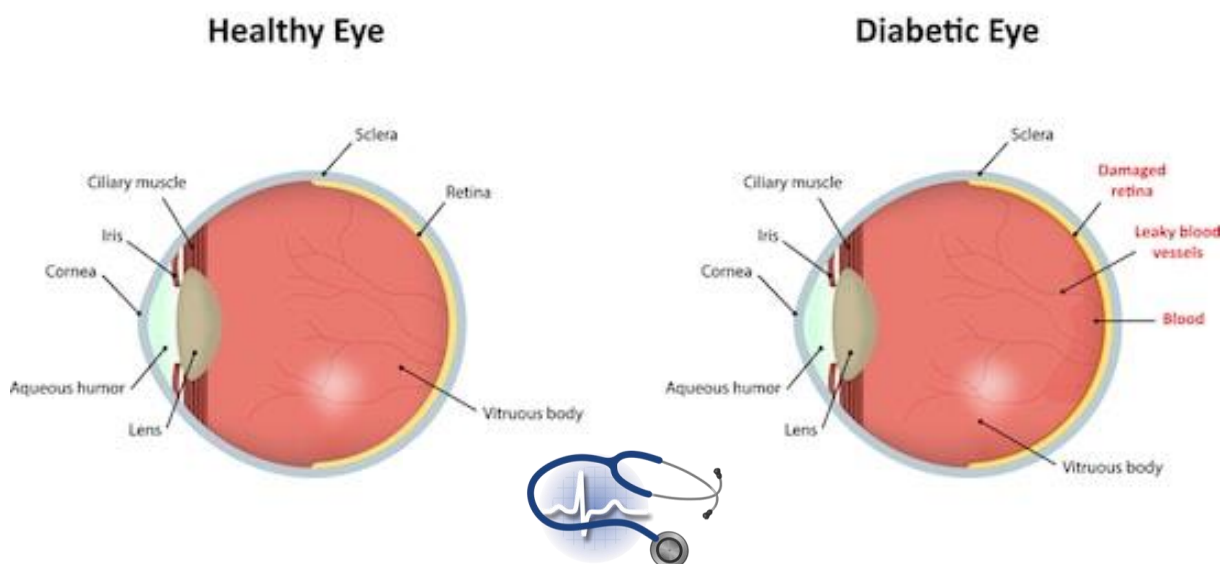
## VISUAL ACUITY (VA)

**Decreased visual acuity has many potential causes:**

- Refractive errors
- Amblyopia
- Ocular media opacities such as cataract or corneal scarring
- Retinal diseases such as age-related macular degeneration
- Optic nerve (CN II) pathology such as optic neuritis
- Lesions higher in the visual pathways

Optic nerve (CN II) pathology usually causes a decrease in acuity in that eye. In comparison, papilloedema (optic disc swelling from raised intracranial pressure), does not usually affect visual acuity until it is at a late stage.

## Diabetic Retinopathy



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## ASSESSMENT OF VA

1. Stand the patient at 6 metres from the Snellen chart.
2. If the patient normally uses distance glasses, ensure these are worn for the assessment.
3. Ask the patient to cover one eye and read the lowest line they are able to.
4. VA is recorded as chart distance (numerator) over the number of the lowest line read (denominator).
5. Record the lowest line the patient was able to read (e.g. 6/6 which is equivalent to 20/20).
6. If the patient reads the 6/6 line, but gets 2 letters incorrect, you would record as 6/6 (-2).
7. If the patient gets more than 2 letters wrong, then the previous line should be recorded as their acuity.
8. You can have the patient read through a pinhole to see if this improves vision (if vision is improved with a pinhole, it suggests there is a refractive element to their poor vision).
9. When recording the vision it should state whether this vision was unaided (UA), with glasses or with pinhole (PH).
10. Repeat above steps with the other eye.

**If the patient is unable to read the top line at 6 metres (even with pinhole) move through the following steps as necessary:**

1. Reduce the distance to 3 metres from the Snellen chart (the acuity would then be recorded as 3/denominator).
2. Reduce the distance to 1 metre from the Snellen chart (1/denominator).
3. Assess if they can count the number of fingers you're holding up (recorded as "Counting Fingers" or "CF").
4. Assess if they can see gross hand movements (recorded as "Hand Movements" or "HM").
5. Assess if they can detect light from a pen torch shone into each eye ("Perception of Light"/"PL" or "No Perception of Light"/"NPL").

## FINE PRINT READING

1. Ask the patient to cover one eye.
  2. Ask the patient to read a paragraph of small print in a book or newspaper.
  3. Repeat assessment on the other eye.
- If the patient normally wears glasses for reading, ensure these are worn for the assessment.



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## COLOUR VISION

1. Ask the patient to cover one eye.
  2. Ask the patient to read the numbers on the Ishihara charts. The first page is usually the 'test plate' which does not test colour vision and if the patient is unable to read this then you should document that the patient is unable to read the test plate, otherwise give a score out of the number of plates correct (including the test plate) for example 13/13.
  3. Repeat assessment on the other eye.
- If the patient normally wears glasses for reading, ensure these are worn for the assessment.

## VISUAL FIELDS

1. Sit directly opposite the patient, at a distance of around 1 metre.
2. Ask the patient to cover one eye with their hand.
3. If the patient covers their right eye, you should cover your left eye (mirror the patient).
4. Ask the patient to focus on your face and not move their head or eyes during the assessment, you should do the same and focus your gaze on the patient's face.
5. As a screen for central visual field loss or distortion, ask the patient if any part of your face is missing or distorted. Formal assessment can be completed with an Amsler chart.
6. Using a red hat pin (or alternatively a cotton bud stained with fluorescein/pen with red base) start by identifying and assessing the patient's blind spot in comparison to the size of your own. The blind spot is found just temporal to central vision at eye level. An enlarged blind spot can be a sign of a swollen optic disc.
7. Assess the peripheral visual field by comparing to your own and using the red hat pin. Start from the periphery and move the target towards the centre until the patient can see it. If you are able to see the red hat pin but the patient cannot, this would suggest a reduced visual field.
8. Repeat this process for each quadrant, then repeat the entire process for the other eye.
9. Document your findings. The left eye should be documented on the left side of the page and the right eye on the right.



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## PUPILS

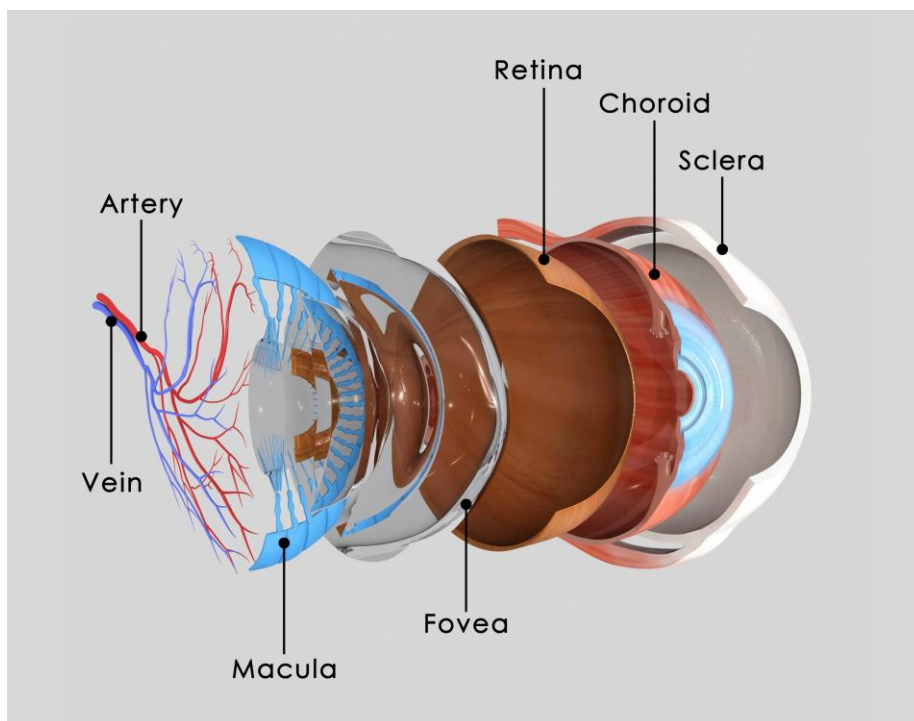
### Inspection

**Size** – normal size varies between individuals and depends on lighting conditions (smaller in bright light, larger in the dark). Pupils are usually small in infancy, larger in adolescence, “normal” size in adulthood and become increasingly smaller in old age.

**Shape** – pupils should be round – abnormal shapes can be congenital or due to pathology (e.g. posterior synechiae seen in uveitis, post surgery)

**Symmetry** – note any asymmetry between the pupils (anisocoria). This may be longstanding and non-pathological, but may relate to pathology. If more pronounced in light this would suggest that the larger pupil is the abnormal pupil, if more pronounced in dark this would suggest the smaller pupil is abnormal. Examples of asymmetry include a large and fixed pupil in CN III palsy and a small and reactive pupil in Horner's syndrome.

**Inspect for ptosis** – significant for Horner's syndrome and cranial nerve III nerve palsy



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## REFLEXES

To best see pupillary reflexes the room should be dimly lit.

### **Direct Pupillary Reflex**

Shine a light into the pupil and observe constriction of that pupil.

Sluggish reaction or lack of constriction may suggest pathology – optic nerve / brain stem / drugs

### **Consensual Pupillary Reflex**

Again shine a light into the pupil, but this time observe the contralateral pupil.

A normal consensual response involves the contralateral pupil constricting.

Lack of a normal consensual response may suggest:

- Damage to one or both optic nerves
- Damage to the Edinger-Westphal nucleus

## SWINGING LIGHT TEST

Move the pen torch rapidly between the two pupils.

This test may detect a relative afferent pupillary defect (RAPD) – caused by damage to the tract between the optic nerve and optic chiasm

(e.g. optic neuritis in multiple sclerosis, ischaemic optic neuropathy in Giant cell arteritis, advanced glaucoma). It's also known as a "MarcusGunn" pupil.

A RAPD can be detected by paradoxical dilatation of the affected pupil when a light is shining into it (it should normally constrict). This points to pathology in the optic nerve (afferent pathway) on this side. The test is essentially comparing the function of the two optic nerves, so when the light is shone into the eye in which the optic nerve is functioning less well, it dilates.

## ACCOMMODATION REFLEX

1. Ask the patient to focus on a distant object (clock on the wall/light switch).
2. Place your finger/object approximately 15cm in front of the eyes.
3. Ask the patient to switch from looking at the distant object to the nearby finger/object.
4. Observe the pupils, you should see constriction and convergence bilaterally.

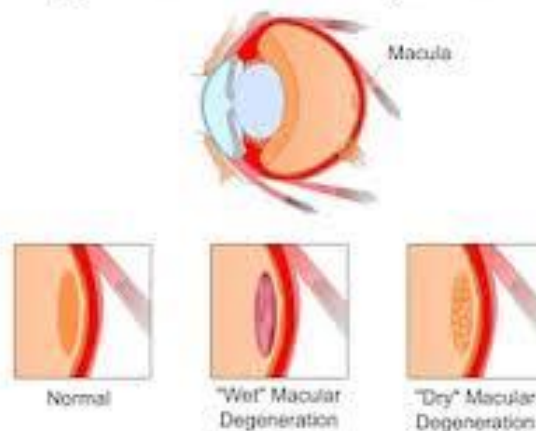


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## COVER TEST

1. Ask the patient to focus on a target (e.g. the light of your pen torch). You will see the corneal reflexes, which will be in the centre of the pupil if there is no ocular deviation. Ask the patient if they see one, or more than one light. If more than one light ask where they are in relation to one another (side by side or one above the other). Determine whether the diplopia is monocular or binocular by seeing if the double vision disappears when one eye is occluded (binocular diplopia is only present when both eyes are open).
2. Cover one of the patient's eyes.
3. Observe the uncovered eye for movement:
  - No movement = normal response
  - Eye moves temporally = convergent squint (esotropia)
  - Eye moves nasally = divergent squint (exotropia)
4. Repeat the cover test on the other eye.

### Age-related Macular Degeneration



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## EYE MOVEMENTS

1. Hold your finger (or pen torch) about 30cm directly in front of the patient's eyes and ask them to look at it. Look at the eyes in the primary position for any deviation or abnormal movements.
2. Ask the patient to keep their head still and follow your finger with their eyes.
3. Ask the patient to report any double vision.
4. Move your finger through the various axes of eye movement ("H" shape).
5. Observe for restriction of eye movement and note any nystagmus.

## OPHTHALMOSCOPY

### Preparation

1. Darken the room.
2. The patient should ideally have their pupils dilated with short-acting mydriatic eye drops such as tropicamide 1%. Advise the patient they will be unable to drive for a period of time if they are given dilating drops. N.B. you will be unable to monitor pupil reactions once dilating drops have been applied, furthermore assessing vision, colour vision, double vision and fields will be less accurate once drops are instilled.
3. Ask the patient to fixate on a distant object.
4. First, assess the anterior segment of the eye using the ophthalmoscope. Fluorescein dye can be applied as an eye drop which will stain and fluoresce yellow under the blue cobalt light filter of the ophthalmoscope if there is damage to the corneal or conjunctival epithelium (e.g. an abrasion). Look for white opacities on the cornea which may be suggestive of a corneal ulcer.

## ASSESS FOR RED REFLEX

1. Ideally, this should be assessed at a distance of around 30cm.
2. Looking through the ophthalmoscope observe for a reddish/orange reflection in the pupil. The red reflex is caused by light reflecting back from the vascularised retina. Absence of the red reflex in adults often is due to cataracts in the patient's lens blocking the light. Patients may have a white reflex leukocoria and in children this may be a sign of retinoblastoma or retinal detachment.



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**Move in closer and examine the eye with the ophthalmoscope**

- 1. Move in closer whilst maintaining the red reflex and examine the retina with the ophthalmoscope – you may need to change the focus wheel to account for the difference in glasses prescription between the patient and yourself. Approach from an angle slightly temporal to the patient.
- 2. Begin by identifying a blood vessel and follow the branching of the blood vessels towards the optic disc (the branches point like arrows towards the disc).
- 3. Assess the optic disc – colour / margin / cupping
- 4. Assess the retinal vessels – cotton wool spots / AV nipping / neovascularization / haemorrhages
- 5. Finally, assess the macula by asking the patient to look directly into the light – drusen seen in macular degeneration, hard exudates, cherry red spot in central retinal artery occlusion

**EYE CONDITIONS AND POSSIBLE DIFFERENTIALS**

**1. Red eye**

There is a wide differential diagnosis for red eye. It is important to differentiate whether the person presenting with red eye needs same day assessment by an ophthalmologist, or if they can be safely managed in primary care.

**2. Cataracts**

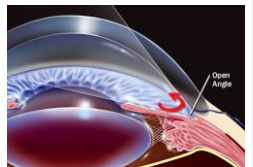
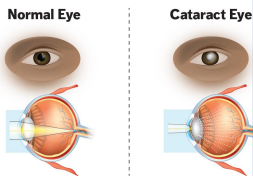
= opacity (cloudy area) that forms within lens of an eye which reduces transparency of lens. Cataract may form in one or both eyes, at any age.

**3. Rosacea - acne**

Acne rosacea is a chronic relapsing skin condition affecting the face, characterized by recurrent episodes of facial flushing, erythema, telangiectasia, papules and pustules. There may be eye symptoms (ocular rosacea), which are usually bilateral.

**4. Retinal detachment**

Retinal detachment = separation of inner neurosensory retina from underlying retinal pigment epithelium, which allows fluid to accumulate in subretinal space. Separation results in progressive loss of vision and can lead to permanent visual loss in affected eye.



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## 5. Rheumatoid arthritis

= chronic inflammatory disease. RA typically presents as inflammatory arthritis affecting small joints of hands and feet, although any synovial joint can be involved. As RA progresses, any system of body may be affected by underlying inflammatory process.

## 6. Styes (hordeola)

A sty is an acute, localized infection or inflammation of the eyelid margin, and typically presents as a painful, localized eyelid swelling that develops over several days.

## 7. Blepharitis

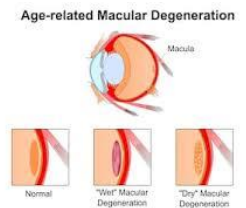
Blepharitis describes inflammation of the margin of the eyelids. Chronic blepharitis can be classified according to which part of the margin of the eyelid is affected: Anterior blepharitis — the base of the eyelashes (located on the anterior margin of the eyelid) are inflamed. Posterior blepharitis — the meibomian...

## 8. Meibomian cyst (chalazion)

A meibomian cyst (also known as a chalazion) is a sterile, chronic, inflammatory granuloma of the eyelid, caused by the obstruction of a meibomian gland.

## 9. Macular degeneration - age-related

Age-related macular degeneration (AMD) is the term applied to changes, without any other obvious precipitating cause, which occur in the central area of the retina (macula) in people aged 55 years and over.



## 10. Uveitis

Uveitis (also known as iritis) is inflammation of the uveal tract (iris, ciliary body, and choroid). Inflammation of nearby tissues, such as the retina, the optic nerve, and the vitreous humour may also occur.

## RED FLAGS



1. Refer a person urgently for same-day assessment by an ophthalmologist if they have a suspected serious, and potentially sight-threatening, cause of red eye including:
  - a. Acute glaucoma.
  - b. Corneal ulcer, contact lens-related red eye and corneal foreign body.
  - c. Anterior uveitis.
  - d. Scleritis.
  - e. Trauma, such as penetrating eye injury or high-velocity foreign body.
  - f. Chemical injuries.
  - g. Neonatal conjunctivitis. Discuss with paediatrics or ophthalmology depending on clinical judgment.

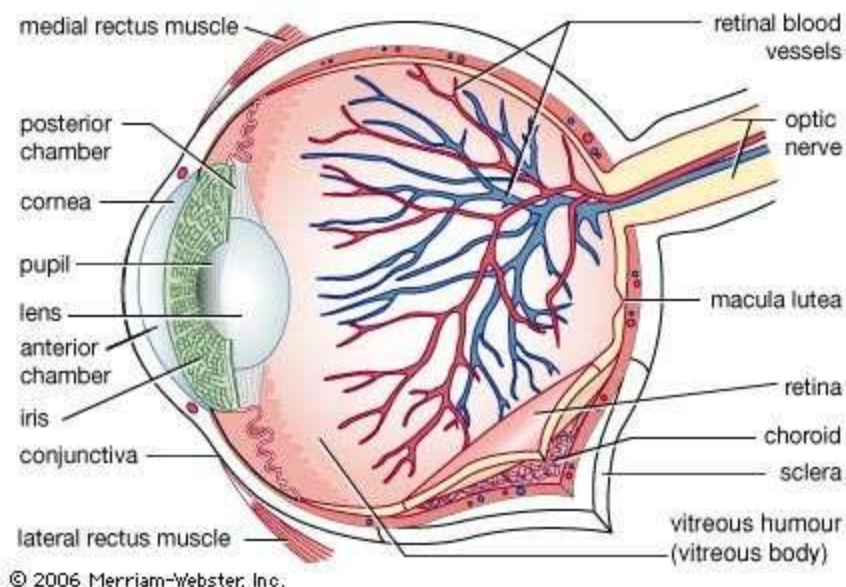


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2. Refer any person with a red eye who wears contact lenses urgently to ophthalmology to exclude corneal ulcer.
3. Refer any person with a high-velocity injury immediately to the emergency eye service. Imaging of the orbit is needed to check for intraocular foreign body.
4. For people with chemical eye injury immediately irrigate the eye with water or 0.9% saline, and arrange urgent transfer for ophthalmology assessment.
5. Indications of a serious, and potentially sight-threatening, cause of the person's red eye include:
  - a. Reduced visual acuity.
  - b. Deep pain within the eye.
  - c. Unilateral red eye.
  - d. Contact lens use.
  - e. Photophobia. This can be a symptom of acute uveitis, corneal ulcer, contact lens-related red eye or corneal foreign body. Systemic causes of photophobia, such as meningitis should also be considered. For further information, see the CKS topic on Meningitis.
  - f. All high-velocity injuries (for example injuries occurring while hammering or chiseling), or injuries involving glass.
  - g. Chemical eye injury.
  - h. Ciliary injection. This pattern of redness may be seen in corneal ulcer, contact lens related red eye, corneal foreign body and anterior uveitis.
  - i. Fluorescein staining. This can indicate corneal ulcer or abrasion.
  - j. Unequal or misshapen pupils, or abnormal pupillary reactions. Abnormal pupil reactions are seen in acute glaucoma and anterior uveitis.
  - k. Pain on pupillary constriction. This can be elicited on testing the direct light reaction, consensual light reaction or finger-to-nose convergence test.
  - l. Conjunctivitis in an infant in the first 28 days of life



**Serious and potentially sight-threatening causes of red eye include:**

**1. Acute glaucoma.** This occurs when the usual drainage of aqueous humor into the anterior chamber suddenly becomes blocked. It is clinically characterized by pain in the eye (usually unilateral), headache, blurring of vision with lights seen surrounded by halos, and nausea or vomiting. Signs include reduced visual acuity, a tender and hard eye, ciliary injection and a fixed and mid-dilated pupil which is unresponsive to bright light. Pupil dilating drops, such as phenylephrine, and systemic antimuscarinic medicines, such as tricyclics, can precipitate acute glaucoma. For more information, see the CKS topic on Glaucoma.

**2. Serious corneal causes.** These include corneal ulcer (bacterial, viral or fungal), contact lens-related red eye and corneal foreign body.

**a. Corneal ulcer and contact lens-related red eye** may start with a foreign body sensation. Usual symptoms include photophobia, blurred vision, discharge, and pain. On examination, there may be severe conjunctival injection, discharge, eyelid swelling and corneal ulceration demonstrated by fluorescein. For more information, see the CKS topic on Herpes simplex - ocular.

**b. In corneal foreign body,** there is often a prior history of wind blowing a foreign body into the eye, or the use of hammering or grinding tools. Symptoms include foreign body sensation, pain, and photophobia. A corneal foreign body may be seen on examination. Visual acuity and pupil reflexes are usually normal. For more information, see the CKS topic on Corneal superficial injury.

**3. Anterior uveitis.** This is inflammation of the anterior segment of the eye. It may be associated with other inflammatory disorders, such as ankylosing spondylitis, but the cause of the inflammation is usually not known. Clinical features include pain, which may be worse when the person is contracting the ciliary muscles, photophobia, watering of the eye, ciliary injection and constricted or distorted pupil.

Vision may be normal or reduced. For more information, see the CKS topic on Uveitis.

**4. Scleritis.** This is inflammation of the sclera (the white outer wall of the eye), and is characterized by severe pain. It can be associated with connective tissue disorders such as rheumatoid arthritis and systemic lupus erythematosus. On examination, there may be reduced visual acuity and abnormal pupil reactions, depending on the site of the inflammation. Scleritis can lead to perforation of the globe.

**5. Trauma.** Such as penetrating eye injury or high-velocity foreign body. If there is a history of high-velocity injury (for example injuries occurring while hammering or chiseling) or an injury involving glass, this should be treated as a penetrating injury until proven otherwise.

These should all be referred immediately to the emergency eye service. It is important to remember that a foreign body may not always be visible.



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**6. Chemical injuries.** These can cause lasting problems with the ocular surface. Alkali solutions can be very harmful.

**7. Neonatal conjunctivitis.** This is diagnosed in any infant who presents with conjunctivitis with discharge in the first 28 days of life. It is important to differentiate this from discharge due to poor drainage of the lacrimal duct. In this case, there is not conjunctival inflammation. Serious causes of neonatal conjunctivitis include gonorrhoea and chlamydia. Corneal ulceration may occur in gonorrhoeal conjunctivitis. Neonatal chlamydial infection can be associated with a systemic infection, such as pneumonia. Therefore infants should be referred to paediatrics for same-day assessment of their conjunctivitis. For further information, see the CKS topic on Conjunctivitis - infective.

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## CASE STUDIES

### 1. ADULT 50 YR OLD

Female complaining of Pain – acute, throbbing, no relief with analgesia, acute reduction in vision in one eye, brow pain particularly bad since last night, cornea looks cloudy

Past Ocular History (POH): Long sighted – used glasses for reading at early age.

Past Medical History (PMH): GP treated for sinusitis – brow pain, haloes around lights , nil else

Medications: nil

Family Ocular History (FOH): nil

Social: Secretary

### 2 .RED EYE – CHILD 10

Acutely itchy, blurred vision, swollen conjunctiva, not painful but really irritable, both eyes affected since last night POH: Nil

PMH: Eczema and asthma

Medications: Emollients for skin, ventolin inhaler when necessary used mainly in summer

Allergies: Fur, grass pollen

Social: School – Best friend has recently got kitten – visited best friend yesterday. Kitten kept away from child but kitten does sleep in best friend's bedroom.

### 3. RED EYE – ADULT 20

Painful, red, discharge ++ (green/yellow, thick, copious), vision blurred in one eye. Tried over the counter optrex infective eyes but made eye itchy, puffy, uncomfortable and no difference to discharge. Bit red when returned from holiday 2 weeks ago but getting worse not better with OTC meds.

POH: Nil

PMH: nil

Medications: oral contraceptive

Allergies: Nil

Social: recent holiday to Aya Napa with group of girlfriends



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## CASE STUDIES

### 4. RED EYE – ADULT 18

Pain – acute, stinging made worse by blinking, Foreign body sensation, blurred vision in one eye for last 3 days.

POH: Previous FB removed last year

PMH: Nil

Allergies: Nil

Medications: Nil

Social: welder by trade

### 5. RED EYE – ADULT 25

Irritating, watering ++, no thick discharge but crusty in morning, upper lid very swollen for 5 days

POH: Nil

PMH: Recent cough, cold & sore throat. Nil else

Allergies: Nil

Medications: Nil but taking cold remedies

FOH: Nil. Social: Teacher

### 6. RED EYE – ADULT 75

Sudden onset, blood shot eye – very dark red, solid block of blood. No pain, no reduction of vision. Wife noticed this morning

POH: Nil

PMH: Diabetes, hypertension

Medications: Atenolol, Metformin, Aspirin

Allergies: Nil

Social: Retired, plays bowls



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## CASE STUDIES

### 7. RED EYE – CHILD 12

Poked in eye with pencil at school, now painful ++, watering ++, blurred vision since getting home from school

POH: Nil

PMH: Nil

Allergies: Nil

FOH: Father has glaucoma

### 8. RED EYE – ADULT 68

Slightly red, feels gritty which gets worse as day goes on, irritating more than painful, watering + for last few days but gritty feeling for last few weeks.

POH: Nil

PMH: Menopausal, not on HRT, nil else

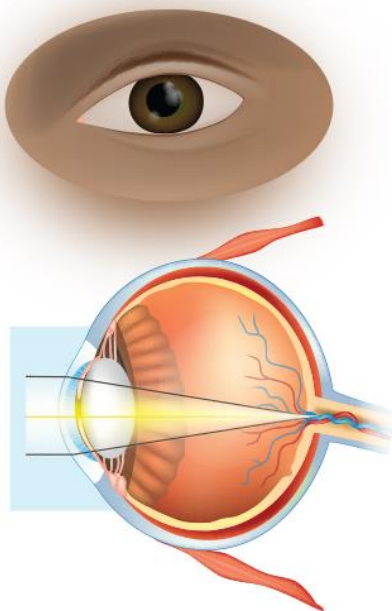
Medications: Herbal remedies for menopause – evening primrose oil

Allergies: Nil

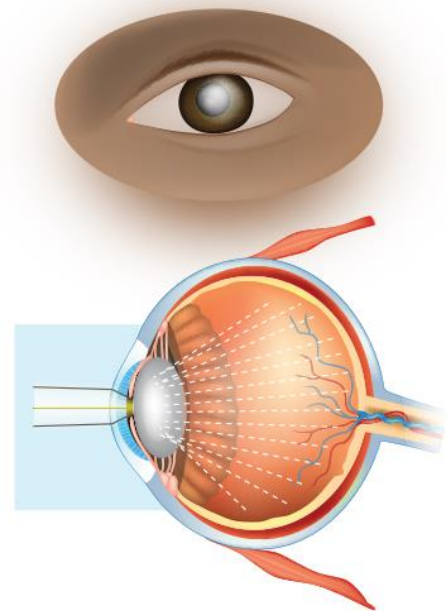
FOH: Nil

Social: retired librarian, recent visit to Tenerife, likes to read and has spent a lot of time reading as it is rotten winter weather

## Normal Eye



## Cataract Eye



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## MULTIPLE CHOICE QUESTIONS

A 5-year old boy comes to the office because of irritated red eyes and decreased vision for the past two days. According to his mother, several children in his class have had similar symptoms. Physical examination shows 20/30 visual acuity in both eyes and conjunctival injection and watery discharge bilaterally. He also has mildly enlarged, tender lymph nodes just anterior to his ears. Which of the following organisms is the most likely cause of his condition?

- a. Pseudomonas Aeruginosa
- b. Staphylococcus aureus
- c. Mumps virus
- d. Adenovirus
- e. Staphylococcus Epidermis

A 26-year-old woman comes to the surgery because she has recently started to experience hip pain. She is an active runner but has not changed her exercise routine lately.

She has also had blurry vision and has an upcoming appointment with the optometrist. Her last vision check was last year. She has also noticed peeling skin and hair loss, which she attributed to the cold winter temperatures, but there has been no improvement despite moisturizing and increasing her multivitamin dose. She takes insulin for type 1 diabetes, a daily multivitamin, and several tablets of cod liver oil supplements daily. Excess of which of the following is most likely responsible for this patient's symptoms?

- a. Vitamin B12
- b. Vitamin A
- c. Vitamin D
- d. Zinc
- e. Vitamin C



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## MULTIPLE CHOICE QUESTIONS

A 60-year-old man comes to the surgery because of a severe headache for 30 minutes.

He describes a left-sided headache and eye pain. He has felt nauseous and vomited twice.

The patient has a long history of migraines but denies usually getting eye pain with them.

His temperature is 36.5°C; P: 84 RR12/min, and BP:134/86. His neuro exam is normal. Eye examination shows his left eye is mid-dilated and nonreactive. His left cornea is also cloudy.

His best corrected VA is 24/6 in the left eye and 6/6 in the right eye. Which condition does he likely have.

- a. Subarachnoid haemorrhage
- b. Eye migraine
- c. Glaucoma
- d. Stroke
- e. Cataracts

78 yr. old female presents with sudden loss of upper half of her vision in her left eye. It last 2minutes then returned to normal. No pain or dizziness or loss of consciousness. PMH:

HPT, High cholesterol. She also complains of pain when combing her hair or touching her head. Vision is since normal.

- a. Shingle
- b. Optic neuritis
- c. Giant Cell Arteritis
- d. Carotid Stenosis
- e. Retinal Detachment



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## MULTIPLE CHOICE QUESTIONS

What tests would you do?

A 68yr old afro-caribbean female presents with increasingly poor peripheral vision. No pain, swelling or discomfort around the eye. No rashes. No recent trauma. Pt has a history of diabetes and hypothyroidism. She takes metformin and levothyroxine. On examination there is some visual field deficits peripherally. Blood pressure : 150/88. P; 72. No new joint pain or fatigue.

Which condition does this patient likely have?

- a. Multiple sclerosis
- b. Open angle glaucoma
- c. Closed angle glaucoma
- d. Cataracts
- e. Presbycusis

A 30yr old male of Turkish origin presents with poor vision for a week. He saw the optometrist and was prescribed some glasses as his vision is 18/6 both eyes. He has only just started using glasses and didn't have previous vision problems. He states that he has also experienced painful ulcers in his mouth during the same period. Also gives a history of painful joints and mouth ulcers recently. No other significant medical history. Fundus examination shows white, superficial infiltrates. Which of the following is the most likely diagnosis?

- a. Vitamin B12 deficiency
- b. Reiter's disease
- c. Bechet's Disease
- d. Multiple Sclerosis
- e. Short sightedness



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## MULTIPLE CHOICE QUESTIONS

A 25 yr. old male attends the surgery complaining of pain when passing urine, sore knees and painful, red, itchy eyes. No significant medical history. Uncle has ankylosing spondylitis.

No recent injury or trauma.

On examination he has bilateral knee swelling. There is also bilateral injection of the conjunctivae. Which of the following microbes is the likely cause?

- a. Neisseria Gonorrhoea
- b. Chlamydia Trachomatis
- c. Herpes Simplex
- d. Treponema Palladium
- e. Clostridium Botulism

What condition does he have and how do u treat?

38yr old female presents with a history with not sleeping well for past 3 months. She feels increasingly tired. Finds it difficult to fall asleep at night. On examination, she has a droopy rt eye, anhidrosis and miosis on the rt side. No recent viral infection and no other medical history. BP: 120/72 P: 70 RR:16.T: 36.2. What condition does she likely have?

- A. Multiple Sclerosis
- b. Horner's Syndrome
- c. Bell's Palsy
- d. Stroke
- e. Meningitis



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## MULTIPLE CHOICE QUESTIONS

A 26-year-old woman comes to the office because of a 1-week history of foreign body sensation in both eyes and eye redness. Her medical history is relevant to a recent and uncomplicated laser refractive eye surgery. The patient complains that for the past few days, she wakes up in the morning with a whitish mucoid discharge in both eyes and a blurry vision. Eye exam shows corneal xerosis and conjunctival redness. Her temperature is 36.7°C (98.2°F), pulse is 61/min, respirations are 16/min, blood pressure is 110/60 mmHg.

Which of the following is the most likely diagnosis.

- a. Bacterial conjunctivitis
- b. Allergic conjunctivitis
- c. Viral Conjunctivitis
- d. Dry eyes
- e. Vernal keratoconjunctivitis

A 55 yr. old male brought in by police after being found behind a restaurant vomiting. He appears aggressive and uncooperative and smells of alcohol. On examination, he has decreased sensation in both legs. His left eye abducts with nystagmus.

The patient is most likely suffering from a deficiency in which of the following?

- A. Vitamin A deficiency
- b. Vitamin B1 deficiency
- c. Vitamin B12 deficiency
- d. Folate deficiency
- e. Zinc deficiency

What condition is this and what do they have?



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## MULTIPLE CHOICE QUESTIONS

A 68yr old female presents with sudden onset pain and decreased vision in her rt eye for past hour. She committed on her way to the surgery. She has noticed halos around lights.

No history of recent injury or trauma. No photophobia. Does not wear contact lens. On examination, the rt eye is hard when palpated over the closed eye. She has brow pain and the cornea appears hazy. Pupil is slightly dilated on the rt side in comparison to the left.

Visual acuity decreased in rt eye. How would you treat?

- A. Acyclovir
- b. Timolol
- c. Methylprednisolone
- d. Tropicamide
- e. Ciprofloxin

40yr old male presents with accidentally splashing bleach in his eye while helping his partner unblock the drain. Driven to hospital by wife. Which of the following is the most

appropriate immediate management?

- a. Irrigate the eye
- b. Neutralize with weak acid
- c. Send to A&E with no interventions
- d. Apply a patch over the eye
- e. Instil lubricating drops.



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